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ABSTRACT

This conference report on legislative decisionmaking in higher education is primarily concerned with the financing of colleges and universities. Management systems information is provided, and sessions were held on "How can a state tell whether or not it is getting its money's worth?" and "How to allocate funds for various segments of higher education." However, all of the sessions did not deal with dollar questions. Other topics that captured the interest of the more than 200 legislators, educators, and government officials included: (1) relevance in higher education; (2) academic freedom and alternatives to faculty tenures; (3) the primary functions of a state board of higher education; (4) who determines an institution's role and objectives; and (5) facts about WICHE with particular emphasis on its Student Exchange Programs. (HS)

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Legislative Decision Making in Higher Education

HOW TO GET THE FACTS

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a report on the
LEGISLATIVE WORK CONFERENCE ON HIGHER EDUCATION

HE 003 167

WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION

WICHE is a public agency through which the people of the West work together across state lines to expand and improve education beyond the high school.

HISTORY:

- was created to administer the Western Regional Education Compact, which has been adopted by the legislatures of all the 13 western states;
- was formally established in 1951, after ratification of the compact by five state legislatures; program activities began in 1953.

ORGANIZATION:

- is composed of 39 commissioners, three from each state, appointed by their governors; they serve without pay;
- is served by a small professional staff, supplemented by consultants, councils, and committees.

PURPOSE:

- seeks to increase educational opportunities for western youth;
- assists colleges and universities to improve both their academic programs and their institutional management;
- aids in expanding the supply of specialized manpower in the West;
- helps colleges and universities appraise and respond to changing educational and social needs of the region;
- informs the public about the needs of higher education.

PROGRAM AND PHILOSOPHY:

- serves as a fact-finding agency and a clearinghouse of information about higher education and makes basic studies of educational needs and resources in the West;
- acts as a catalyst in helping the member states work out programs of mutual advantage by gathering information, analyzing problems, and suggesting solutions;
- serves the states and institutions as an administrative and fiscal agent for carrying out interstate arrangements for educational services;
- has no authority or control over the member states or individual educational institutions; it works by building consensus based on joint deliberation and the recognition of relevant facts and arguments.

FINANCES:

- is financed in part by appropriations from the member states of $15,000 annually; the states also contribute $7,500 each to participate in a regional program in mental health, mental retardation, special education, corrections, rehabilitation, and the helping services;
- receives grants and contracts for special projects from private foundations and public agencies; for each dollar provided by the states during Fiscal Year 1972, WICHE will expend more than $17 from non-state sources; in the past 16 years, grant and contract commitments have exceeded $25 million.

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Legislative Decision Making in Higher Education:

HOW TO GET THE FACTS

Proceedings of the
Legislative Work Conference on Higher Education

Edited by
Robert H. Kroepsch

Western Interstate Commission
for Higher Education

P. O. Drawer P
Boulder, Colorado 80302

March 1972

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Foreword

The theme for WICHE's 7th Legislative Work Conference was "Legislative Decision Making in Higher Education: How to Get the Facts."

In this conference, the facts-to-be-gotten were mostly financial. And getting them meant using modern management techniques, in addition to asking such questions as: What's really happening to the public's dollar for higher education? And, how can you really tell?

The heart of the keynote address by John Keller was a pro-and-con examination of Computer Age modern management and its importance to higher education. Keller, consultant, Hawaii Department of Budget and Finance, spoke on "The Managerial Revolution, Legislators, and Higher Education."

A detailed example of the Keller-described managerial revolution followed during a full day of sessions on the activities of the National Center for Higher Education Management Systems at WICHE.

In addition, there were sessions on "How can a state tell whether or not it is getting its money's worth?" and "How to allocate funds for various segments of higher education."

But all of the sessions did not deal with dollar questions. Other topics also captured the interest of the more than 200 legislators, educators, and government officials.

These topics included:

- Relevance in higher education
- Academic freedom and alternatives to faculty tenure
- The primary functions of a state board of higher education
- Who determines an institution's role and objectives?
- plus, Facts about WICHE, and particularly its Student Exchange Programs

Clearly, there were a variety of topics. In some cases, lawmakers and educators found new areas of agreement. In some cases, they didn't. However, the purpose of this conference was not agreement among all participants on all topics. We would not want this — even if we could achieve it.

The purposes of the biennial WICHE Legislative Work Conference are (1) to provide a forum for topics of mutual concern, and (2) to strengthen communications and understanding among western legislators, government officials, and educators.

For three days, 200 of the West's leading decision makers in government and higher education probed, discussed, and traded ideas on budgets for colleges and universities, as well as other matters. The legislator spoke and listened from his special perspective; the educator from his. We feel that both left the conference understanding just a little bit more — about the topics and about each other.

We would like to extend our special thanks to all those who took time from their busy lives to participate and to all who prepared papers and exhibits. In the preparation of this report, we also wish to acknowledge especially the contributions of the following WICHE staff members: Lee Gladish, publications specialist; Grant Duncan, graphic artist; Sue Young, photographer; Gerry Volgenau, public information officer; Virginia Patterson and Jo Arnold, editors; Bob L. Brown, personnel director; Jean Davis, administrative assistant; and Carol Francis, secretary.

This publication has been distributed to all legislators and college and university presidents in the West. We hope it will help to stimulate further discussions and increase understanding.

Robert H. Kroepsch
Executive Director

Francis A. Barrett
WICHE Chairman

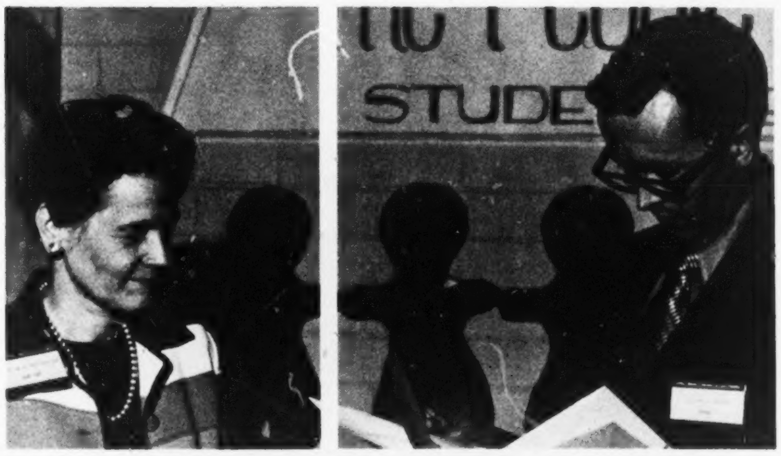
SEVENTH LEGISLATIVE WORK CONFERENCE

Legislative Decision Making in Higher Education:

HOW TO GET THE FACTS

1

Getting the Facts About WICHE



STUDENT
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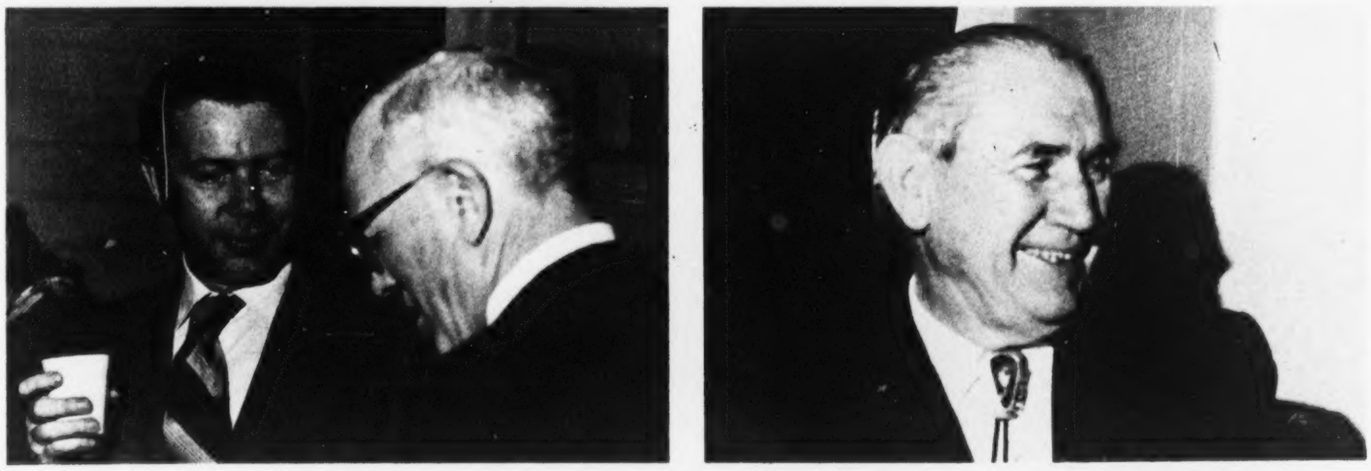
It was a time for questions. And a time for answers. Legislators wanted to know about WICHE, in both concept and detail. WICHE staff members were on hand to answer those questions.

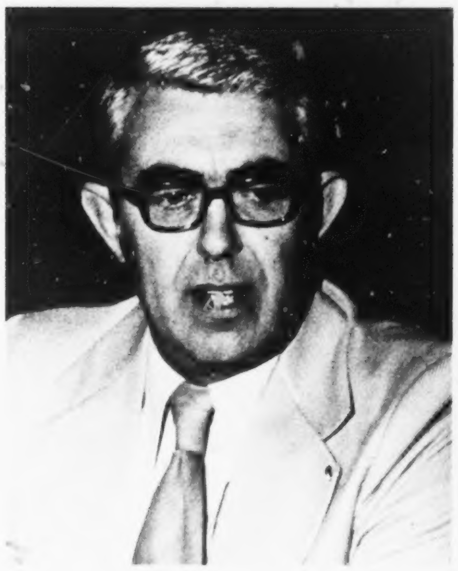
The occasion was the opening session of WICHE's 7th biennial Legislative Work Conference held on a warm and clear December afternoon. Western legislators, government officials, and educators attended the session and posed their queries. Many stayed for almost two hours to talk, sip coffee, and learn about the 20-year-old WICHE organization.

Pictured here are some of the people who came to get the facts about WICHE, and some of the WICHE staff members and Commissioners who tried to supply those facts.

TOP: **Mrs. Virginia Patterson, director, Student Exchange Programs, and Benjamin Johns, state budget director, Montana. *LEFT, Above:* WICHE Commissioner Dr. William E. Davis, president, Idaho State University; and *Below:* WICHE Commissioner C. Gale Sellens, of Wheatridge, Colorado, and Mrs. Patricia Locke, director, Ethnic Programs in Higher Education.**

BELOW, Left: **Dr. Peter Hiatt, director, Continuing Education Program for Library Personnel, and Francis Bain (with glasses), of Colorado; and *Right:* Dr. Weldon P. Shofstall, superintendent of Public Instruction, Arizona, who brought greetings from Governor Jack Williams.**





ABOVE, Left: WICHE Commissioner Lynn W. Newbry, senator, Oregon; and *Right:* Stanley W. Boucher, director, Mental Health Continuing Education, and Raymond Reed, D.V.M., University of Arizona.

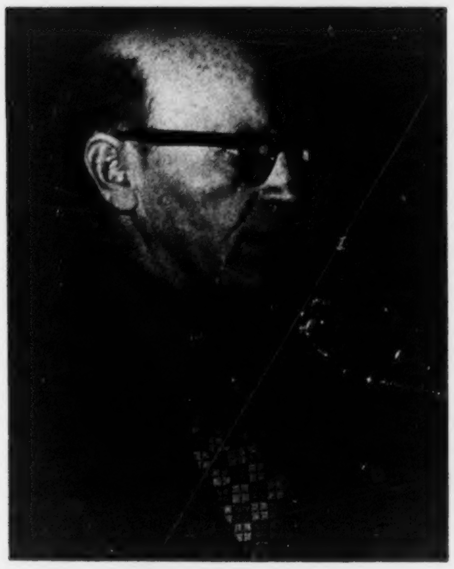
RIGHT, Above: Richard Martinez (left), director, Community College Mental Health Worker Program, and Dr. Ronald Holler, of Arizona State Hospital; and *Below:* Mrs. Marie Branch, director, Nurse Faculty Development to Meet Minority Group Needs.

BELOW, Left: Dr. Joanne Arnold, staff associate, National Center for Higher Education Management Systems at WICHE; *Center:* Robert Stewart (with glasses), administrative assistant to Nevada Governor Michael O'Callaghan, and Paul H. Ries, consultant, WICHE Corrections Pogram; and *Right:* WICHE Commissioner Dr. William E. Morgan (left), president emeritus, Colorado State University, and Bruce J. Martin, project director, Regional Institute for Corrections, Administrative Study, WICHE Corrections Program.

This year we are educating 790 of our young people in professional schools.

A state-supported institution naturally accepts qualified resident students first. Then they look at our WICHE-certified students and accept them competitively on the basis of their qualifications.

$5,000 is a fair price for a medical student and $4,000 is a fair price in dentistry and veterinary medicine.



Senator Richard R. Jones,
Wyoming
WICHE Commissioner

Legislative Decision Making: About WICHE's Student Exchange Programs

Moderator: Senator Richard R. Jones,
Wyoming, WICHE Commissioner

Participants:
Edward W. Nelson, Executive Secretary, The Montana University System, WICHE Commissioner
James Furman, Executive Coordinator, Council on Higher Education, Washington, WICHE Commissioner
Senator Lynn Newbry, Oregon, WICHE Commissioner
Maurice J. Hickey, D.M.D., M.D., Dean, University of Washington School of Dentistry
Hope Lowry, M.D., Associate Dean for Admissions, University of Colorado School of Medicine
Dr. A. Ray Chamberlain, President, Colorado State University

Senator Jones: We are glad to share some of our ideas about the Student Exchange Programs, WICHE's oldest programs. This year western states are educating 790 of our young people in professional schools in medicine, dentistry, veterinary medicine, physical and occupational therapy, dental hygiene, and optometry. We're spending $1.8 million to pay for that education.

I guess we should not have been surprised a little over a year ago when our medical, dental, and veterinary schools began to tell us that they couldn't go on taking students for what we were paying for their professional education. Everything else has increased in cost, and education is no exception. You legislators know how much of an increase funding of education has had in your states. The WICHE Commission is given the responsibility by the compact under which we operate to determine and fix support fees. And so members of our Commission took the responsibility of visiting a number of the professional schools where our young people are enrolled and talking with officials of the schools. Whenever we made a visit, we sent a Commissioner from a sending state and a receiving state along with the staff. We wanted to know whether our kids were getting the break on admissions that we thought they were. We wanted to talk about a fair price for the educational service they were receiving. We wanted to know whether this program was really working, whether the reservoir of good will that we associated with the program was also present in the schools.

We were really impressed by our visits to the schools. We found that the Student Exchange is well regarded in every school we visited. The program is making education possible for young people when the opportunity is not available at home. It is providing an educational mix of geographic backgrounds in the professional schools which seems healthy all around. We think the program is working so well for us that we want to broaden it in order to make every state both a sending and receiving state. We want to make it possible for any young person who can't get the education he wants in his state to cross into another state offering that program and to enroll.

One thing I need to make clear to you that wasn't clear to me before we started visiting these schools. In the professional schools, not every student who wants to get in is going to make it. A state-supported institution naturally accepts qualified resident students first. Then they look at our WICHE-certified students and accept them on the basis of their qualifications.

We certainly found a regional commitment to the principle of the Student Exchange and a recognition of the importance of western states working together for the mutual benefit of this region. Our history of cooperation, of course, applies in many other areas of regional significance in addition to education — water, for instance.

We want you to have some idea of our thinking as we arrived at our recommendation that the support fees in our three major fields be increased in 1973. We have agreed that $5,000 is a fair price for a medical student and $4,000 a fair price in dentistry and veterinary medicine.

Actually, we think we're getting a bargain for the service provided. We've concluded that it is more economical to "send" students at the new prices than to try to build separate professional schools in every western state. That is, as long as the education our young people want is available to them in reasonable degree.

I'm going to introduce representatives of the three fields which concern us most. We have learned a lot from them, and I think you will be interested, too.

Hope Lowry, M.D.,
Associate Dean for Admissions,
University of Colorado
School of Medicine

MEDICAL EDUCATION

Dr. Lowry: I can speak only to the topic of medical education and to the specific situation at the University of Colorado School of Medicine. I believe, however, that the admissions procedures which I describe are typical of most medical schools.

First, let me give you a picture of medical school admissions. For the class entering the medical schools of this country in 1971, there were in the nation about 29,000 applicants for 12,361 places. It has recently been estimated by the Association of American Medical Colleges that for the class entering in 1973 there may be as many as 40,000 applicants. Present planning (which may very well be revised upward because of federal pressure) calls for fewer than 14,000 places for that year. Because of the increasing competition with regard to both quality and quantity, because of the great concern of the American people with health care, and because of the present widely advertised physician position shortage, the public is becoming increasingly interested in medical school admissions. Admissions committees are not only deluged with applications but with inquiries from the applicants themselves, from their families, friends, university regents, and legislators. There is increasing pressure from the public upon legislators and regents to limit admission in state tax-supported institutions to state residents. For the class entering in 1970 in the case of both publicly and privately owned schools there was a slight increase of freshmen who were residents of the state in which the school was located as opposed to the preceding year.

WICHE Students Given Preference

Let me use the admission policy of the University of Colorado School of Medicine as an example of the manner in which WICHE students are given preference. All applicants for medical school present as credentials transcripts of college courses and gradepoint averages, scores on the Medical College Admission Test, and recommendations from college instructors. Based upon this information, decisions are made by admissions committees as to which applicants are to be invited for personal interviews with members of the admissions committee. The applicant's college record and scores on the Medical College Admission Test give evidence of demonstrated intellectual ability of the applicant to complete the medical school curriculum successfully. Recommendations from college instructors and impressions gained from the personal interview give further evidence of motivation and, in addition, serve as a means of determining the suitability of the applicant's personality and character for the practice of medicine.

TABLE 1

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE, 1971 FRESHMAN CLASS

	APPLICANTS			STUDENTS ENROLLED	
Geographic Category	Number	Invited for Interview	Offered Places	Number	% of Class
Colorado	250	205 (81%)	110 (44%)	99	79%
*NROS	2370	100 (4%)	17 (0.72%)	11	9%
WICHE	237	116 (49%)	17 (7%)	15	12%
Alaska	8	4 (50%)	1	1	
Arizona	104	38 (37%)	4	4	
Idaho	37	19 (51%)	3	2	
Montana	44	31 (70%)	5	5	
Nevada	16	9 (56%)	0	0	
Wyoming	28	15 (54%)	4	3	

If WICHE applications had been placed in the NROS pool and subjected to the screening used for that group, only 49 of the 237 applicants would have been invited to complete their applications.

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*Nonregional out-of-state

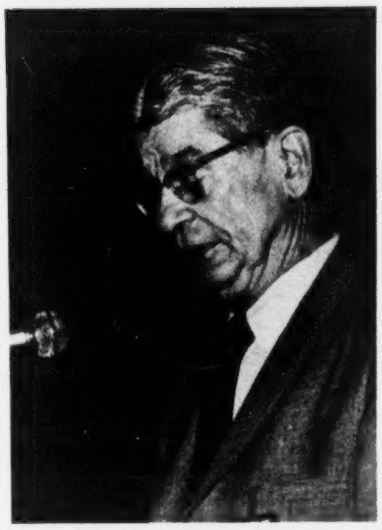
Table 1 demonstrates the number of applicants, the percent invited for personal interviews, the percent offered places, and the percentage of the final composition of the 1971 entering class for the three geographic categories of students admitted to the University of Colorado School of Medicine. It is apparent that the manner in which WICHE applicants are handled approximates more nearly the manner in which Colorado applicants are handled as opposed to nonregional applicants. The percentage of students offered places and the percentage in the class give clear evidence that Colorado gives preference to WICHE students as opposed to other nonresidents.

Competent Professionals the Goal

We are pleased to have WICHE students in our student body. Once enrolled, they perform well. We think they will make fine practitioners, fine doctors. And after all, as professional medical educators, helping to identify and to educate thoroughly competent doctors is a goal which we have set ourselves and which society demands.

DENTISTRY

Dr. Hickey: The University of Washington School of Dentistry takes WICHE students as a matter of policy approved by the university. I have never seen the text of the agreement, but the commitment is now of many years' standing. We interpret the university's commitment to mean that we are to admit an unspecified number of qualified students from the WICHE states. By unwritten agreement of our admissions committee, 80 percent of the space in the entering class is given to Washington residents. The remaining 20 percent of the entering class is given to certified WICHE students.



Maurice J. Hickey, D.M.D., M.D.,
Dean,
University of Washington School of Dentistry

In order to meet the commitment I describe, the University of Washington School of Dentistry does not accept applications from students coming from states other than WICHE. An occasional admission from California or Oregon may be noted, but such admissions are very rare, indeed. Basically we accept Washington residents and students from WICHE states which do not have a dental school.

No Quotas Assigned

You should be aware that we do not assign a quota of places to any WICHE state. The students we accept for our entering class represent the very best qualified students from all the WICHE states. The WICHE-certified applicant is given priority for acceptance if he is in competition with an equally qualified noncertified applicant.

We are very concerned about the quality of education we provide and the top performance of the dentist we have produced. If we make a rare exception to our usual practices, it is because we are concerned with excellence. For that reason we are going to accept the people who have the very best qualifications to enter our school. Therefore, we do reserve the right to offer a place in our class to the very best qualified western students whether they are WICHE-certified or not. This means that superior qualifications of a student are more important to us than the dollar he brings. We recognize that accepting such a student places an extra burden on the taxpayer of the state of Washington. There are two good reasons why we think the policy is important: (1) We want the quality of the dentist we educate to remain high. (2) Some nonresident students always remain in Washington after graduation to practice dentistry.

What is the future of the Student Exchange Program in our institution? I am going to be completely frank and say that I don't know. There are several factors to consider. As long as the University of Washington maintains its agreement we will continue our present admissions policy. I want you to understand that neither the present support fee of $2400 per student per year nor the projected fee of $4000 per student per year covers the actual cost of educating a dental student. Cost studies are now in progress at the university to identify annual cost per student in all the health sciences. For purposes of this discussion, let's take a look at the ADA figures. The mean cost per year at all U.S. dental schools is $9,506. At private schools the figure is $7,968, and at the public schools the figure is $11,107.

Granted the federal government makes a contribution to the cost of providing professional education, the attitude of the legislators in our state is extremely important. They expect a nonresident student to subsidize his own education. They do not expect Washington taxpayers to pick up the subsidy. Then, too, the demand for admission of qualified Washington residents may force reevaluation of our present method of allocating places to nonresidents, WICHE students included.

At the present time our university is closely scrutinizing all sources of income. The extent to which the university considered the support fee paid for dental students at the time the program was initiated is unknown to me. Now, however, the amount of payment as a fair recompense to the state of Washington for the educational service provided is surely a matter of great concern. The current study of costs may influence the attitude of the finance people at the university about the suitability of our participation in the program.

Dr. A. Ray Chamberlain,
President,
Colorado State University

VETERINARY MEDICINE

Dr. Chamberlain: I am speaking as the president of a state-supported university which offers a degree in veterinary medicine and which has enrolled WICHE students in numbers nearly equal to the number of Colorado residents enrolled.

We like having WICHE students and we like the Student Exchange Programs. Nevertheless, the Joint Budget Committee of the Colorado legislature has presented us with a tuition formula which we must apply to all students. Colorado residents are to pay tuition representing one-fourth of the average cost of education. Nonresidents are expected to pay 100 percent of the average cost. Hence, the thrust of my remarks to you.

New Fee Minimum Acceptable

It costs between $9,000 and $10,000 to educate a veterinary student each year. Of that total, federal funds supply about $4,000. The new support fee in veterinary medicine is the minimum amount acceptable if the Student Exchange Program in veterinary medicine is to continue at CSU. A periodic review of the adequacy of the support fee is also important to continuation of the program.

There were 272 applications from WICHE students for admission to the veterinary program at CSU for fall 1971. Thirty-eight WICHE students were accepted, 2 Nebraska students, and 46 Colorado residents.

CSU has a contract with Nebraska which pays $4,000 per student plus an annual adjustment. An eastern state is offering CSU $7,000 per year for places in the entering class.

We feel a moral obligation to honor the regional commitment made long ago when the Western Regional Education Compact first made it possible for us to exchange students and dollars in the West. Colorado State University has participated in the Exchange by receiving students since the beginning back in 1953.

Sending States Must Assume Realistic Share

The directive from our legislature makes it absolutely essential to look at the cost to the Colorado taxpayer of providing education in veterinary medicine to nonresident students. Keeping our doors open to WICHE students depends on the willingness of the sending states to assume a more realistic share of the cost of providing the education their students receive.

James Furman,
Executive Coordinator,
Council on Higher Education,
Washington
WICHE Commissioner

RECEIVING STATE VIEW

Mr. Furman: I am speaking as a Commissioner from a receiving state. I believe that the state of Washington and her institutions of higher education have proven by their record of admissions that we believe in the principle of a student exchange. Not only have we demonstrated our belief in the concept through participation in the WICHE exchanges, but also through our development of the WAMI program of medical education.

Mounting Costs Stark Reality

As a representative of a state deeply concerned and involved in financing the mounting costs of higher education, we face the reality that professional education in the health sciences is a costly service to provide. It is essential education, but it is costly education. I believe that the responsible officials in my state who grapple with funding of higher education must be convinced that the sending states are making as serious, as sincere, and as substantial an effort as we are in providing for education in the health professions.

From the point of view of the supplier of services, the support fee represents a price which the receiving state is willing to accept for the service provided, recognizing the benefit to our state of the presence of able young people from divergent backgrounds. It also represents a price for the preference which is given to WICHE students. The willingness of the sending state to pay the support fee, representing an equitable estimate of the receiving state contribution to the subsidy required to supply the service, is a gesture of goodwill and public relations which is not likely to be overlooked by legislators in Washington.

Since Washington has to date always been a receiver of students, let me say that I look forward to a great broadening of the fields covered under the Student Exchange Programs. It is critically important that the program be expanded greatly. I believe that a broad-based student exchange program must include thousands of students and dozens of fields. In this way, Washington can truly be involved in reciprocal efforts which allow students from this state to attend institutions elsewhere.

The Council on Higher Education, in cooperation with the various public institutions of higher education in Washington, is deeply involved in degree-program accountability studies which emphasize elimination of programs which are unnecessarily duplicative. This commitment to reducing unnecessary programs within our state is no less important when applied to the 13 western states of the WICHE region.

Edward W. Nelson,
The Montana
University System

WICHE Commissioner

SENDING STATE VIEW

Mr. Nelson: I am a Commissioner from a sending state, Montana, and over the years we have probably used the exchange as a means of educating our young people as much or more than any other state.

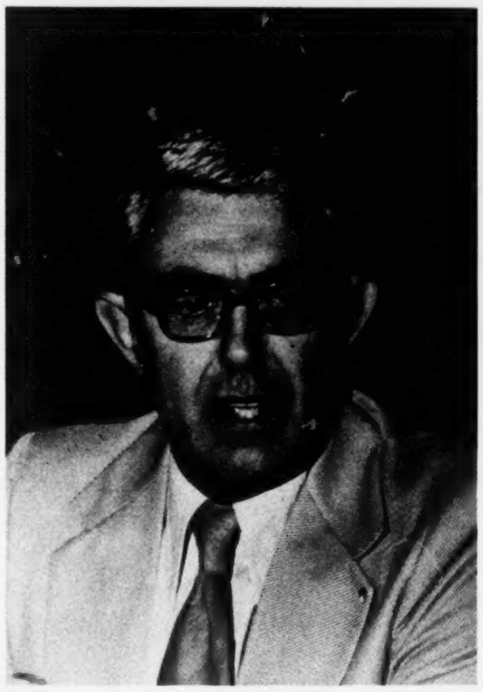
I see the pooling of educational services through the SEP as a great cooperative venture for the West for the purpose of improving health services as well as educational opportunities. The West is a region of tremendous land area. Even though there are some concentrations of population, generally the land is sparsely populated. Because of large areas and few people, we suffer from a distribution of services as they relate to the needs of society and our ability to deliver needed services.

We need more, not fewer, cooperative frameworks for the sharing of service resources. The Student Exchange Program is one area of cooperation that we must defend and expand. We must continue to look for ways of transporting resources and services across those artificial boundaries to human fulfillment known to us as state lines.

I look on the SEP as one evidence of the cooperative framework existing in this region to improve the delivery of various services to society. It is true that the students involved receive an economic benefit through the transfer of funds related to student enrollments. A far greater significance of the program is the benefit to society provided by having a pool of trained professionals. I want to stress my belief that the money we spend in the Student Exchange is in support of the health enterprise in the West.

To end my comments on a lighter note, I want to share with you a poem which has something to say about the West and our nostalgic reminiscences.

'Twas good to live when all the sod
without no fence nor fuss
Belonged in partnership with God,
the government, and us.
With skyline bounds from East to West
and room to go and come.
I loved my fellow man the best
when he was scattered some.



Senator Lynn Newbry,
Oregon
WICHE Commissioner

OVERVIEW

Senator Newbry: Oregon is both a sending and a receiving state. We admit WICHE students to our medical and dental schools and we send Oregon students to the cooperating WICHE schools of veterinary medicine. We need places for veterinary students, and so we need the Student Exchange.

Best Educational Bargain

I am a state legislator and I want to point out that the Student Exchange Program probably provides the best educational bargain that a state legislature could buy anywhere.

Suppose Oregon were to build a veterinary school. The capital investment would run somewhere in the neighborhood of $20 million. Invested at 4 percent, this money would produce $800,000 a year. Currently, Oregon has 39 students enrolled in veterinary medicine under the Student Exchange. Suppose we use the new support fee figure of $4,000 per student and apply it to those 39 students. We would be spending $156,000 in support of their studies. And our Oregon taxpayers would net a saving of $644,000. Now, remember that I am discussing the capital investment only. An operating budget would add substantially to the taxpayers' obligation.

I see a benefit to the receiving schools from the presence of WICHE students. It is essential that professional schools be operated at full enrollment in order to minimize costs per student. The Student Exchange guarantees full enrollment of fully qualified students. The receiving school also receives more income from the presence of the exchange student than from a resident student, reducing the obligation of the receiving state taxpayer.

In Oregon we subsidize education. We expect to subsidize education. In point of fact we are subsidizing the education of doctors and dentists for some of you who do not have medical and dental schools. And some of you are subsidizing the education of our veterinary students. We are helping each other, and we need each other. Recognizing that mutual interest, I still say that we have to look at the best use of the tax monies entrusted to us.

Better Investment Than Building

I believe that it is a better investment to support students in their chosen fields where the program exists than to build more buildings all over the West, duplicating services that we could be sharing.

Every state is faced with the prospect of reducing existing programs within state institutions of higher education. By further expansion of the Student Exchange, we may find other ways of offering these opportunities at less expense through expanded cooperative ventures. We hope to make every state that is now sending students a receiving state sometime in the not-too-distant future.

WAY TO GO

Senator Jones: You legislators in the audience are going to hear more about the support fees in medicine, dentistry, and veterinary medicine. We expect the new fee schedule to go into effect in the fall of 1973.

When you hear a request for higher appropriations to support your young people in programs of education outside your state, we hope you will approve the increase. Those of us who have looked at this problem from every side are convinced that the Student Exchange is the way to go in offering educational opportunities that young people want and society needs.

It would cost far more to provide the buildings and operating budgets for these necessary programs in every state.

. . . when blind choices are made it turns out that ultimate resource demands are greater than anyone expected . . .

Making comparisons and decisions about higher education on the basis of cost per student credit hour is a little like trying to decide whether to buy a Cadillac or a Pinto solely on the basis of knowing the cost per hour of operating an overhead milling machine in the Cadillac division of General Motors and the comparable number at the Ford plant.

In a way, I don't blame the doubters.

Would it be possible . . . to develop a flexible, universal, state government PPB system?

Data on programs, not objects of expenditure, are required.

The Managerial Revolution, Legislators, and Higher Education

John E. Keller,
Consultant to the Director,
Department of Budget and Finance,
Hawaii

The theme and purpose of this conference links legislators, decision making, and higher education; and since these linkages are generally well understood I will not belabor the obvious with a lengthy commentary on them. However, there are two new aspects of this nexus whose connections to each other and to legislators, decision making, and higher education are not so obvious. I refer here to the topic of the "managerial revolution" and to the conference theme of "How To Get The Facts." Simply stated, my thesis is that there has, indeed, been a revolution in recent years in the concepts and techniques used to manage large organizations — especially public ones; and that this revolution is having a profound effect on the kinds of facts which are deemed relevant for decision making and on the way they are gathered and used.

Questions Outline Issue

Perhaps the best way to frame this issue is to pose a series of three questions: (a) What do legislators want to know? (b) What do legislators need to know? (c) How can legislators get the information they need in order to make good decisions?

With respect to the first of these questions, "What do legislators want to know?" the answer unquestionably is "a very great deal." However, I would like to make it clear that the managerial revolution to which I have referred has to do only with the resource allocation process. While that process is a very large and important part of the total decision making responsibility of an executive or legislative branch, it is only a part. Beyond it there is another whole class of questions such as: "What is the community's reaction to student disorders?" "Does the president have too many vice-presidents reporting to him?" "Is Professor Smith a member of the John Birch Society (or the SDS)?" "Shall the university accept classified research contracts?" "What are the grounds for revocation of tenure?" All of these are important questions about which legislators have strong interests and desires for information. How to "get the facts" in response to questions of this kind, however, is a problem beyond the scope of this discussion and about which the "managerial revolution" has little to offer in the way of assistance.

But with respect to "getting the facts" and answering the questions relating to resource allocation decisions, the more sophisticated insights and improved techniques accompanying the managerial revolution have made a great deal of difference.

There are a number of ways of categorizing the kinds of facts legislators need to know concerning resource allocation decision making — but one very important distinction needs to be made now. Certain questions are clearly and fully related to resource allocation decision making. Examples of this kind of question are: "Should the university attempt to develop academic strength in astro-physics (or micro-biology, or high-energy physics, or Far Eastern language and culture)?" "Should the university adopt year-round operations to conserve on capital requirements?" "Shall we add a Ph.D. program in engineering?" "What are optimal mixes of faculty by type, and their costs, for a given level of teaching effectiveness?" "What are are respective marginal effects on the output of undergraduates of given increments of budget devoted to direct teaching, to counseling, and to student aid?" and, "For various levels of expenditure what are the risks, uncertainties, constraints, spillovers, and effects on learning of live classroom lectures vs. videotaped presentations — and for tutorials vs. programmed learning?" or perhaps ultimately and more pertinently, "What mix of all four of these teaching techniques has the greatest teaching effectiveness for given investments?"

Maximize Benefits

What makes these classic resource allocation questions is that they all are asking for program specifications which will maximize some set of public and private benefits (or outputs or measures of effectiveness) for given resource inputs — or equivalently, to minimize resources consumed for given levels of desired output or effectiveness.

There is, however, a related class of questions which are very much "value laden" and which involve large questions of basic public policy or social equity. Too often questions of this kind are addressed purely on their philosophical merits and legislators do not ask for, nor are they offered, the facts on the resource implications of those policies. I am thinking here of such questions as, "Shall the university attempt to alter the proportions of minority groups among its student population?" "Should the public higher education system within a state be organized on a regional basis or by level of institution?" "Shall the components of a statewide system be distinguished by function or by level of student academic achievement at entrance?" "Should some proportion of disadvantaged students be admitted who are below the usual qualification standards?" "Should student charges be imposed, and, if so, how much for whom?"

No doubt the answers to these questions turn in a major degree on the public's beliefs and attitudes and on considerations of social equity. But it would be tragic now, and unfortunately it has been tragic in the past, to have decisions made on these questions without a knowledge of their resource consequences. Whether it is a matter of developing overall academic plans, making specific program choices, or adopting major policies of the kind noted above, to do so without some notion of their aggregate and long-term cost implications is simply to court disaster. Almost inevitably when "blind" choices are made it turns out that the ultimate resource demands are much greater than anyone expected, and in many cases they are literally insupportable. Under these circumstances all kinds of program cutbacks, stretch-outs, and policy modifications have to be undertaken, which result in great waste as well as seriously disappointed expectations.

No Guarantee

Now, I would be the last to claim that an improved resource allocation process (which is the end result of the managerial revolution) is some kind of guarantee that legislators will get all the facts they need and hence will make uniformly prudent decisions. The system simply isn't that good. But an approach to "getting the facts" which emphasizes clarity of objectives, which scrutinizes all of the alternative ways of achieving them, and which insists on knowing both their real effectiveness and total costs is sure to raise the batting average of good (not optimal!) decisions — even if only very modestly at first.

Let me return now to the second question, which is: "What kinds of facts do legislators need to know in order to make better resource allocation decisions regarding higher education?" Some of the kinds of facts needed I have alluded to already: for example, the resource implications of program and policy choices. But there are dangers in both directions in "getting the facts" on costs. When an ardently desired policy is being advocated or when a favorite program is being "sold," there is remarkably little discussion of their cost implications; only the alleged benefits of the policy or program manage to get a hearing. On the other hand, during an old-fashioned budget review, nothing but costs get talked about. Consideration of the increment of benefits lost as a result of budget cuts is seldom addressed in any serious analytic fashion. The name of the game is to make everything cost less — and whether the lost benefits greatly exceed the saved costs, or whether some other reduction could save more dollars and with a smaller reduction in effectiveness is a question seldom asked, or satisfactorily answered. The usual answer to a tough question of this kind is to apply an across-the-board percentage cut. And while this may save some analysis and agony, it also implies that all programs are of equal marginal productivity — the only conclusion in this situation which is almost certainly wrong.

Costs, Benefits, Alternatives Needed

Sensible resource allocation decisions can only be made when both the costs and benefits (or effectiveness) of alternative courses of action are known. For example, if I tell you that there is a manufacturing establishment in the state of Michigan which turns out 4-wheeled vehicles which cost $2,000 apiece; and that there is another manufacturing establishment in the state of Michigan which turns out 4-wheeled vehicles which cost $3,000 apiece, are you in any position to tell me (assuming that you have as much as $3,000 to spend on personal transportation) which of those two vehicles you would prefer to buy? Or could you say which of the two plants was the more efficient one? No, it is impossible to make judgments on these points because all of the "facts" you have gotten concern costs only and that simply is an inadequate basis for a decision on how to allocate your personal resources. However, if I told you the $2,000 vehicle is a Pinto and the $3,000 vehicle is a Cadillac, then you would be in a good position to make a choice as to which vehicle you would buy and to decide which was the more efficient plant. Interestingly enough, you would undoubtedly analyze this problem of choice from the standpoint of an economist: you would assess the incremental difference in quality and performance between a Cadillac and a Pinto and compare it with the increment in costs of a Cadillac over a Pinto — and quite intuitively, but correctly, judge that the margin of benefits exceeded the marginal costs and hence the Cadillac was the preferred investment. (Incidentally, one of the components of the managerial revolution of which I have spoken simply attempts to apply that style of marginal economic reasoning regularly and routinely to the problems of program choice in higher education — as well as all of the other activities of state governments.)

Some Comparisons Ludicrous

But think of how much wasted effort could be saved and how many misleading conclusions avoided if the multitude of ill-conceived higher education cost studies could be channeled into this sounder framework. Cost per student credit hour tells a little bit about one phase of the "production" process; it says nothing about the number, quality, and cost of final outputs. Making comparisons and decisions about higher education on the basis of cost per student credit hour is a little like trying to decide whether to buy a Cadillac or a Pinto solely on the basis of knowing the cost per hour of operating an overhead milling machine in the Cadillac division of General Motors and the comparable number at the Ford plant.

Another distinction concerning "the facts" which legislators need for their higher education resource allocation decision making is that between objects of expenditure and programs. Programs are aggregations of physical resources (people, facilities, equipment, and supplies), policies, and technologies which by their integrated operation produce a good or a service or a capability of interest to the organization as a whole because it tends to achieve one or more of the organization's objectives. Clearly, therefore, programs are the focus of decision making: How much good are they doing (i.e., to what degree are they helping to achieve the objectives)? What, in the aggregate, are they costing? And because they are the focus of decision-making attention, they should be the stuff out of which budgets are built — not objects of expenditure. I am continually surprised by the old-fashioned budgeteer's approach to resource allocation decision making. He is apparently indifferent to whether the activity or organization is producing useful outputs related to some objective, he appears unconcerned about capital costs (that is some other office's concern), he shields his eyes from the long-term total operating cost implications of the activity, but he is a bear on the fact that two typewriters were requested and one could be deferred, or on the fact that administrative costs are now one-half of a percentage point above some eternally ordained maximum. The operative principle behind this approach seems to be that, "I don't know (or care) whether the organization is doing a vast amount of good or no good at all, I'm just going to guarantee that in the upcoming year they do whatever it is that they are doing in the cheapest possible way." That, of course, is better than giving program managers and agency heads a blank check and believing all of their stories about how much good they will do (cost unspecified) — but not much!

Issues Analyzed or Flood of Facts?

A final distinction I would like to make concerning the facts that legislators need is the difference between getting detailed individual facts and analyses of issues. Certainly even now — and much more so in the near future when the "computer nuts" have lived down their earlier exaggerated promises — a government or academic manager or a legislator can call for and be virtually swamped by "facts." In fact their very volume and availability may make it harder to use them. It will be so much more difficult to see the grains of wheat among all of the chaff. But, be that as it may, better decisions depend on better analysis and not simply on accumulating an ever-larger inventory of undigested and uninterpreted data. Right now a legislative committee in most states can get "facts" on enrollment, student credit hours, courses offered, faculty salaries, and the formal budgeted cost of operating certain organizational entities. In some more "advanced" states it is possible to get things like faculty workloads and costs per student credit hour. But with all of these "facts" in hand, is anyone really any better equipped to make decisions about how to maximize outputs or benefits for given budgetary increments? Can anyone say with any confidence how the costs and quality of the instructional and research outputs of Institution A compare with those of Institution B? Or why they differ?

Now, those are very tough questions to answer in a wholly satisfactory way — but they are the right questions to ask and unlike many operations analysts (or traditional institutional researchers and cost accountants) I would much rather have crudely correct answers to good questions than precisely wrong answers to dumb questions. But this implies that the "facts" that legislators and others need are not the simple statistical data now offered them. What is needed is a variety of facts — some of which are not even collected presently — integrated and interpreted in a valid, insightful piece of analysis.

A case in point: data on the courses taken by level and discipline for student majors of various kinds need to be combined with the unit costs of those various instructional activities to get the nominal cost of producing a degree winner in a particular field. This information in turn needs to be combined with data on graduation rates, persistence, attrition (gross and net), and transfers to get some idea of the total system's cost per degree actually awarded, by field. Then we need some data on the noninstructional resources invested in the students plus information about their native ability, levels of academic achievement at the start of their collegiate careers, and indications of the intellectual, vocational, social, and personal increments of "value added" measured at the point of graduation and at several later points in the graduate's subsequent career. All of these data need then to be analyzed very carefully and interpreted and compared with the costs and quality of similar graduates from other institutions in similar situations with similar objectives — or with the results of earlier efforts in the same institution. If these comparisons were to reveal large and otherwise unexplained discrepancies, then it would signal the need to inquire further into the resource mix, policies, and technologies currently in use to see what changes could be effected so as to maximize the improvement realized for whatever additional investment of resources could be spared.

Clearly, getting this kind of information is an order of magnitude more difficult than getting the traditional kinds of "facts"; but if legislators are going to do their part in improving the quality of decision making in higher education they are going to have to be persistent in their demand for answers to the right questions, patient in their support of those who are genuinely trying, and willing to give the moral and monetary backing that this new approach requires.

There is also an important *quid pro quo* involved in this new way of looking at institutions of higher education. To the extent that the institutions are willing to face up to the kind of trauma-inducing questions outlined above, to figuratively stretch themselves out on the rack of the hard questions and to have their feet held to the fires of critical and informed legislative inquiry — then to that extent they must be relieved from the burdensome chore of explaining why they replaced cars at the end of 100,000 miles this year instead of 150,000 miles as was done last year; why overhead costs have jumped (the institution had to develop an information system and organize an analytical studies unit to answer the new questions!); or why Professor Jones (who is the country's leading producer of video tapes in his field) is only putting in six classroom hours per week.

Free Academic Managers to Manage

Legislators have to allow academic managers to be, indeed, managers. If they are producing quality outputs for below average costs or superior products for average costs, then how they managed that is their business and they shouldn't be required to justify how they spent every nickel. If Professor Smith holds all of his tutorials in the local beer parlor but gets a disproportionately large share of his students into good graduate schools, then that is his secret. Similarly, if the chairman of the history department cajoles all of his faculty into each teaching an extra tutorial or course and then uses the saved resources to provide extra, high-class secretarial support for the faculty members, that is his prerogative as a manager; and if his outputs stay up and he doesn't exceed his original budget, why should he have to defend his innovation to an object-of-expenditure-oriented review group?

Of course, the converse is true, too. Academic managers who consistently overrun their overall budgets and fail to make good on their promised performance ought, as they said in the French Revolution, to be "shortened"!

Given that we are in rough agreement as to the "facts" that legislators need, I would like to turn now to the question of where and how legislators can get these facts (or really, insightful pieces of analysis).

One possible source of help would be to augment the groups which directly support the legislature: the office of the legislative analyst or auditor and the key committee staffs. Or a legislature might wish to consider creating a kind of private RAND-type organization to help answer their more complex, long-range questions. All of these options have merit in that they would assist legislators in discharging various of their responsibilities in an improved fashion. I personally believe that legislators in general should have more support of all three kinds.

But, for a variety of reasons I am persuaded that none of these options is an appropriate or efficient way to get the kind of resource allocation information which I have been discussing. The principal reasons for my belief are that these difficult questions must be faced full time and by some group which has to live with the answers they give; the needed data can only be gotten by someone intimately familiar with the informational resources, systems, and idiosyncrasies of the institution; and these data and analyses are needed even more desperately by the persons charged with the management of the institution. All of these considerations argue, I believe, for placing the primary responsibility for "getting the facts" for legislators, as well as for itself, on the institution.

A most important *desideratum* here, though, is to assure that gathering the facts is not an *ad hoc,* gut-busting, sporadic stunt. To be truly useful the needed data and analyses must be regularly (albeit not painlessly!) produced. The question, therefore, is whether an integrated and comprehensive resource allocation system be devised which routinely generates relevant data and insures its use in executive decision making — and, in addition, makes pertinent parts of it available for legislative review and action.

The answer to this latter question is, I believe, a qualified "yes." The managerial revolution to which I have several times referred has created a series of concepts and techniques that have been formalized into a system considerably more effective in making resource allocation decisions than any of the more traditional ways of budgeting.

Theory Emerged from Defense Operations

This new approach grew out of the operations research work of World War II, the experience gained in managing large and complex systems such as the ballistic missile and Polaris programs and the national space effort, the application of microeconomics to problems of choice in the public sector, the emergence of a theory of program rather than functional or line item budgeting, and the crystallization of all of these contributions into a workable administrative system in the U.S. Department of Defense under Secretary McNamara.

A civilianized version of this approach was imposed on the rest of the federal government by President Johnson in 1965 under the title of a Planning, Programming, and Budgeting (PPB) System. Since then, of course, PPB in government has had a checkered career and to some the techniques alleged to be PPB have become anathema. In a way, I don't blame the doubters. Out of a generous fund of ignorance and enthusiasm its innocent supporters promised far too much and with no idea of the costs in time, money, and training which would be required to implement it. At the same time substantial numbers of "experts," whose theoretical understanding and practical experience were at best minimal, were exploiting the market in a most distressing fashion. Inevitably, a marked disillusionment set in and PPB has had a somewhat tarnished reputation in some quarters ever since.

Capable of Improving Resource Allocation

I think, however, that a substantial consensus exists on the point that the concepts and techniques of PPB are sound and potentially capable of markedly improving the quality of the resource allocation process, particularly in the public sector. The major difficulties have had to do with the implementation problem: unrealistically short implementation schedules; inadequate understanding of the theory and practice of PPB; a lack of the highly skilled people needed for analysis; an insufficient commitment of resources; and a lack of experienced practitioners to guide the effort. Where these difficulties have been more or less overcome, it has been possible in varying degree to achieve the payoffs (in terms of better and more relevant "facts," analyses, and decisions) that PPB's knowledgeable — and, hence, more conservative — proponents have suggested.

Two of the "success stories" of which I have some recent first-hand knowledge have to do with implementing PPB in the state government of Hawaii (including the University of Hawaii) and the NCHEMS at WICHE project for developing a PPB system for use by all higher education institutions. I would hasten to add that they are very partial success stories since the respective efforts are at best in mid-course and ultimate success is by no means assured. But they have been well and truly launched, they have done a substantial number of "right" things so far, and they seem generally to be headed in the right direction. Perhaps I am only indulging in the kind of optimism exhibited by the fellow who fell off the top of the Empire State building and as he flashed by each floor he called out, "All right so far!" But, for whatever it is worth, Hawaii and NCHEMS at WICHE's PPB efforts are "all right so far."

I suppose at this point some of the WICHE-NCHEMS staff are about to protest that while there is sometimes a diversity of views as to what they really are doing, or are supposed to be doing, developing a PPB system is not one of them. However, having had the opportunity to be present at Genesis, so to speak, I happen to know that the original proposal to the USOE stated that one of the purposes of the project was ". . . to design a flexible, universal, university-style PPB system." The NCHEMS at WICHE project in general, and the contemplated PPB system in particular, were intended to improve campus level management, to facilitate the exchange of comparable data, and to assist states and the federal government in their higher education planning by creating a body of compatible data relevant to the institution's, the state's, and the federal government's resource allocation planning and management needs. It seems to me, therefore, that a short answer to the conference theme question, "Legislative Decision Making in Higher Education: How To Get The Facts" is to support your local institutions in their attempt to adapt and adopt the work of NCHEMS at WICHE.

Unfortunately, like most short answers, that one needs some qualification. Besides, I don't want to appear to be nothing more than a pitch man for NCHEMS at WICHE. My caveat concerns the fact that, at the present time, WICHE-NCHEMS is not developing a full-blown PPB system for higher education; and even if it were, it lacks the resources to directly assist institutions attempting actually to implement a university-style PPB system.

Use Demanded

This cautionary note is prompted by the fact that my experience both in Hawaii and in California has convinced me that an effective PPB system depends on the creation of a practical and long-term viable administrative-bureaucratic system which not only can use the techniques, models, and other tools being created by NCHEMS at WICHE, but in fact *demands* their use. This, I now believe, is an absolutely essential condition for routinely getting the data and analyses required *and for having them actually affect the budgetary process.* NCHEMS at WICHE is developing many of the components of a PPB system, but it has not as yet addressed this problem of designing a resource-allocation decision-making system; and without it, all of the information systems and fancy models will remain technical *tour de forces* — monuments in the desert to be gazed on in awe by the wandering tribes of administrators, but having no effect on their lives. I cannot emphasize this point too strongly. Someone must sit down and prescribe: what kinds of information on what kinds of forms will be generated by what groups; to whom will they be sent and on what schedule; what kinds of actions will be taken by those receiving the information; and how in the end will the analyses done result in program decisions which are, in turn, faithfully reflected in actual budget allocations.

This is a large and complicated subject, and it would be inappropriate to attempt to explore it here. Suffice it to say that unless NCHEMS at WICHE addresses this problem, much of its other potentially quite useful work will remain largely sterile.

Is Statewide PPB a Possibility?

A final point: all that I have said about legislators, decision making, getting the facts, and adopting the managerial revolution in the form of PPB relates not only to higher education but applies with equal or greater cogency to all of the functions of a state government. Hence, a thought has been in my mind for some time now: Would it be possible, on the same collaborative basis that NCHEMS at WICHE has used so successfully, to develop a flexible, universal, state government PPB system? The economies of joint development are substantial, the need is great, the clients no more diverse than the several hundred individualistic colleges and universities in NCHEMS at WICHE, and the state-of-the-art with respect to PPB in state government is well ahead of where it was with respect to higher education in 1966 when NCHEMS at WICHE got started. It is, I believe, a possibility worth serious consideration.

In conclusion, let me summarize very briefly the principal points I have tried to make in this presentation:

(a) Legislators desire and need a wide range of information, a large and important fraction of which has to do with their resource-allocation decision-making responsibilities.

(b) The "facts" that legislators need for resource allocation decision making in higher education are not the simple traditional ones. Data on programs, not objects of expenditures, are required; costs need to be handled on a much more sophisticated basis and only in relation to benefits or outputs; data on students before and after their college careers are needed; and the focus should be on the larger analytic issues involving the "educational production function" rather than on the details of how low-level managers spend their funds.

(c) These data and analyses must be routinely and regularly available not only for legislative purposes but for the direct management of the institutions themselves. For these and other reasons, the appropriate place to turn for the relevant facts and analyses is to the institutions.

(d) In order to cope with this new and more sophisticated style of management the institutions have to take advantage of the managerial revolution which has occurred over the recent past. This managerial revolution has been institutionalized for public sector agencies in what are called PPB systems.

(e) NCHEMS at WICHE is in the process of developing components of higher education PPB systems. It needs to integrate these components with greater attention to the systemic and implementation aspects of the problem.

(f) The model of the successful NCHEMS at WICHE project for improving the management of higher education might well be considered for application to state government as a whole.

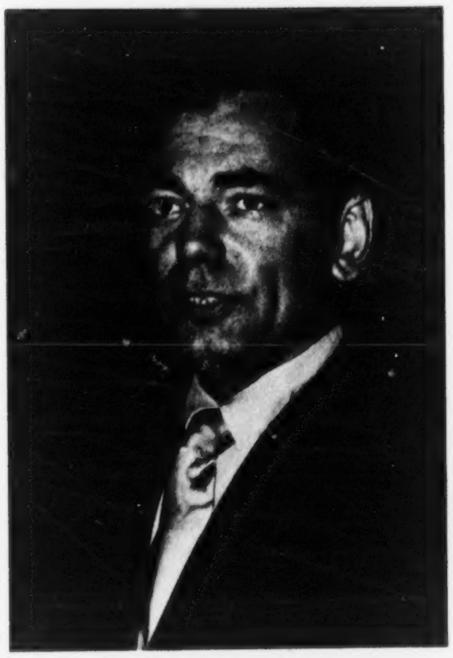
Today, accountability is being interpreted as having an additional meaning. Not only must stewardship obligations be met; the provider of funds is demanding an assurance that desirable benefits are deriving from resources invested . . .

Today over 700 institutions and agencies are NCHEMS at WICHE participants.

The management process in higher education is complex and interrelated.

The various elements in the higher education management process . . . are goal setting, program planning and resource allocation, execution, and evaluation.

The cooperative approach . . .



Decision Making: How to Get Some of the Facts

Dr. Ben Lawrence,
Director,
National Center for Higher Education Management Systems
at WICHE

Higher education, in the broadest sense of post-secondary education, is today the target of growing pressure for improved management capability. This persistent pressure is primarily the result of two forces. First, institutions of higher education are being faced with a "revenue crunch"; they are being forced to make more effective use of the resources they have at their disposal. Second, more strings are now attached to the revenues that are made available to institutions.

The first force represents a change in degree, not in kind. Institutions have seldom, if ever, received all the funds they considered necessary, but the current situation is one of greater stringency than ever before. The second force represents a change in kind. Until very recently, accountability has required only that an institution be able to indicate that all appropriated funds were expended in the manner stipulated by the funding individual or agency. Thus, the emphasis was on the stewardship function, and the need was to insure that higher education was operating in a way to accomplish its purposes at a reasonable cost.

New Dimension in Definition of Accountability

Today, accountability is being interpreted as having an additional meaning. Not only must stewardship obligations be met; the provider of funds is demanding an assurance that desirable benefits are deriving from the resources invested in the educational enterprise. Funding agents have abandoned the focus on only one element of the cost-benefit equation and are now interested in both elements. This two-pronged perspective provides a much more sound basis for those essentially political choices that must be made between alternative higher education programs and between higher education programs and other burgeoning social services that are supported by public funds. The demands for this new kind of accountability have prompted a growing and urgent need at all levels for a management and decision-making capability that is responsive to these changed conditions.

Responding to this need and recognizing that such a capability could not be developed without full participation of representatives of all levels of higher education decision making, a large number of institutions and agencies of higher education have formed the National Center for Higher Education Management Systems.

The founding organization behind NCHEMS is the Western Interstate Commission for Higher Education, a public agency made up of the thirteen western states, which has worked since 1953 to expand and improve education beyond high school.

Grass roots cooperation is, and has always been, the underlying philosophy of NCHEMS at WICHE. From its earliest inception in 1965, when Dr. Merle Allen, then WICHE commissioner from Utah, suggested that interstate cooperation in the application of computer science to higher education management problems should be investigated, institutions and agencies of higher education have been involved.

Colleges, universities, governing boards, coordinating councils, and other higher education associations have participated from the first consultations with institutions and agencies in 1966; through refinements of direction in 1967, the preparation of a proposal for the development of management information systems, and a review of that proposal in 1968; to its implementation on a national basis in 1969. Today over 700 institutions and agencies are NCHEMS at WICHE participants.

Experienced administrators recognized that the state of the art in management systems offered positive promise if applied sympathetically to higher education institutions. The cooperative approach, implemented through an agency trusted by both institutions and state agencies, offered a way to reduce the possibility of reinventing wheels, to pool institutional talent, and to increase the probability of productive applications of the information provided.

Three Goals Identified

The goals of the NCHEMS cooperative venture are threefold: (1) the improvement of institutional management and institutional ability to respond effectively to those to whom they are accountable, (2) the improvement of statewide coordination, and (3) the improvement of decision-making processes at the highest national levels.

Clearly, these goals are both too broad and too ambitious to provide any concrete direction to the Center's programs. To be effective, an organization must focus on more limited and more specific objectives. In order to clarify its focus, the Center has developed a general conceptualization of the complete higher education planning and management process and selected those areas in which an expenditure of effort will yield the largest returns.

Moderator:
Dr. Rita R. Campbell,
Senior Fellow,
Hoover Institution,
Stanford
WICHE Commissioner

The management process in higher education is complex and interrelated. It occurs at many levels — department, campus, institution, system, state, and national. While the nature of the decisions to be made varies greatly between these levels, the decision-making process is essentially the same.

The various elements in the higher education management process can be grouped into four areas. These four areas are somewhat arbitrary; nevertheless, they represent concentrations of the significantly different elements of the process. These areas are goal setting, program planning and resource allocation, execution, and evaluation. Let me make more explicit the distinctions between these areas and their interrelationships.

Goal setting refers to that activity in which the broad value-oriented purposes are to be achieved or identified. For example, at the state level the goals for higher education are established ultimately by the people of the state through their elected representatives. Goal setting determines what tó do and why in the broadest sense. A goal, for example, might read, "The education of every citizen as a socially mature individual, able to use his social instincts and leisure time well." While such goals are the foundation of the planning process, understanding of the goal formulation process and the necessity of explicit statements of such goals is almost totally lacking.

Activities Are Interrelated

Program planning and resource allocation is a composite of four elements. First, decision makers must determine and select operational objectives, chosen from among many feasible alternative objectives, necessary to accomplish the goals determined under the goal setting function. Second, feasible alternative programs available to accomplish the objectives selected must be identified, and a set of outputs for each feasible program must be specified. Third, calculation of resources in terms of space, people, equipment, and dollars necessary to support the respective alternative programs must be made. Finally, decision makers must evaluate alternative programs. This evaluation includes comparison of the planned outputs with the expected costs and proceeds through an iterative process of evaluations and trade-offs until a feasible plan at a reasonable cost is determined. Part of the evaluation process also includes the identification of the source of funds and the political as well as the economic feasibility of carrying on the program.

Execution is that step in the process that insures that chosen activities are done well and efficiently. In this step, the resources allocated are used to implement the planned program with the intention of producing the outputs as planned.

Finally, evaluation is that step in which the actual outputs are compared with the planned outputs to determine the extent to which the organization accomplished that which it set out to do.

Application Is Multidimensional

The concepts in this simplified four-part model pertain across all management levels. The problems at each level are viewed from a different perspective, and specific decisions involved may be unique at each level. Similarly, the individuals or the organizations or agencies involved at each step vary widely. At one level evaluation is done by the U. S. Office of Education and the Congress; at another level evaluation is done by the department faculty.

While the goals and objectives may be different at each level, and while the cast of characters involved may be totally different, great interdependence enters the system because execution takes place basically in one place — the institution. For example, recognize that the institutional program that produces a civics major and thereby achieves an institutional goal may also serve the national goal of providing opportunity to economically disadvantaged individuals for full participation in American society. Thus, national, state, and institutional objectives and programs are inexorably linked.

The whole planning and management process, then, is obviously heavily dependent on an ability to transmit information from step to step, both within any level of the management process and between levels. As a result, the existence of a common, well-defined data base that can respond to the information needs of all of the levels is a necessity. Without the ability to transmit information throughout this highly complex and interrelated system, there can be no system. Since the operational phase of this system resides within the institutions of higher education, the data base must reside there also. But since this data base must serve the information needs at all levels, it should eventually include the data elements critical at all levels. Thus, as in the previous example, for institutional purposes data concerning an individual's academic major at the student level may be quite sufficient; however, for national purposes data on the individual's family income may be required. Clearly, then, a comprehensive communications base, blanketing extensions of each level and at the same time flowing up and down through each level to all others, is essential.

It is apparent that the National Center for Higher Education Management Systems cannot devote itself to the entire management problem. The resources available to NCHEMS at WICHE for research, development, and training efforts would be ineffectively spent if they were spread across the full spectrum of the management process and across all levels. Its mission had to be limited and areas of concentration selected. In cooperation with the participating institutions and agencies, the Center identified those areas considered to be most crucial to the improvement of management in higher education at this time. As a result, the initial efforts of the program are the communications base and program planning and resource allocation.

To carry out the activities in these two major areas, NCHEMS at WICHE must also devote a great deal of attention to the articulation of the management planning processes at the various levels of higher education decision making. The development of an effective communications base is possible only with a solidly conceptualized model of the entire management planning process, and we must be concerned not only with the conceptual structure, we must be concerned also with the specifics of research and development efforts carried on with respect to the other areas of the process. For example, while the Center is not specifically engaged in research and development with regard to goal setting at various levels in higher education, the nature of those goals serves to identify many of the data elements that must be included in the communications base. As a result, NCHEMS at WICHE serves as a repository or collector of much that is currently happening in the realm of higher education management systems.

Recognizing, then, that the Center must concentrate its efforts within manageable dimensions, we are addressing ourselves to the development of a communications base to the development of systems in program planning and resource allocation through our efforts in research, development and applications, and training and implementation.

Replenish Intellectual Capital

The primary role of the Center's research unit is to address the need to replenish the store of "intellectual capital" through research and to provide research support for projects under way in the development and applications unit. In addition to undertaking projects that break new ground in providing additional planning and management capabilities, the research unit expands the existing store of usable knowledge by drawing on research already reported.

Some current and future Center activities in research include the investigation of future planning and management systems for higher education, the measurement and utilization of the outputs of higher education in planning and decision making, the investigation of indicators reflecting trends in higher education, the development of resource allocation and planning models, the analysis of financing plans for higher education, research directed toward tools and techniques for statewide higher education planning and management, the study of student flow and faculty flow, and the analysis of techniques for more effectively utilizing resources available to higher education.

Many of the activities undertaken involve the formulation and analysis of analytical models, drawing heavily upon the methodologies of operations research and quantitative economics. In certain areas the research unit develops the bases and conceptualization within a problem area, resulting in the design specification for its own projects or those within the development and applications unit.

Work for National Communication Base

The NCHEMS at WICHE development and applications unit seeks to develop and test the application of modern economic and management principles in institutions of higher education in a way that will aid decision makers in managing resources. Working within the Center's areas of concentration, the development and applications unit is working toward the development of a national communications base consisting of standard data definitions and procedures for arraying data and the development and testing of analytical tools designed for facilitating resource planning and allocation in higher education.

Among current projects in the development and applications unit that aim toward the development of a communications base are the finalizing of a data elements dictionary and information exchange procedures. In addition, the unit is developing several systems for the reporting and analyzing of the utilization of resources in terms of people, money, and facilities.

In the area of resource planning and allocation, the Center's D & A unit is currently completing a resource requirements prediction model and a student flow model. Preliminary work has begun on the development of a statewide planning system and a manual on the design of information systems.

The acceptability of standard definitions and procedures — the communications base — to institutions and agencies is enhanced because of the parallel development of resource planning and allocation tools that facilitate the use of these procedures. The analytical tools themselves have a high degree of acceptability because of their link to the communications base procedures. Thus, the interweaving of resource planning and allocation tools with the communications base procedures results in an overall effectiveness for both.

Training Aids Implementation Process

The third thrust of the NCHEMS at WICHE effort to improve higher education management and decision making is its training and implementation program. As its name implies, this unit works toward the implementation of the Center's products at institutions and agencies of higher education by providing decision makers with the competencies, understandings, and skills necessary for their use. The payoff of the total NCHEMS at WICHE expenditure of dollars and effort will be realized only when such implementation takes place. To accomplish its mission, the training unit develops training materials and strategies that will communicate the concepts, tasks, and other essential elements related to each new management tool to the various audiences in the higher education community. It conducts product seminars and technical workshops related to NCHEMS products as well as general training sessions dealing with the concepts, interrelationships, and utility of NCHEMS products.

See Some Light

Thus, we trace the NCHEMS at WICHE effort in developing a communications base and in providing tools for program planning and resource allocation from the conceptualization and analysis of the problem to the development of appropriate tools for its solution to the training of institutional and agency personnel to use those tools.

At the National Center for Higher Education Management Systems at WICHE we are beginning to see some light through the chinks we've made in the walls of our limited areas of inquiry. Other areas of crucial importance to improved higher education management have yet to be explored. We invite you to join us in this exciting venture.

Staff Discusses NCHEMS Thrust and Activities

The staff of the National Center for Higher Education Management Systems at WICHE went to Phoenix to teach; they left Phoenix clearly aware that they had been taught.

"It was a crash course in The Legislator's World for us," one staff member has said. "We work so closely with higher education personnel, and we know that corner of the world well. We discovered that there's another corner of the world we need to learn more about."

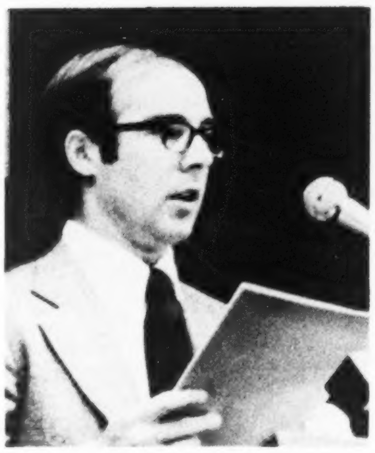
So, while Center personnel conducted four small group sessions covering various facets of NCHEMS at WICHE activities, they believe the overriding impact of the Phoenix conference on the Center was not in what they taught, but in what they learned.

Conferees who attended the sessions on "Outputs of Higher Education" heard *Dr. Robert Wallhaus,* director of the NCHEMS at WICHE research program, and *Sidney Micek,* of the research staff, lay a conceptual base for outcome planning in higher education.

What higher education has done in the past and continues to do in the present is to center its attention on the historical costs of higher education as the primary basis for making decisions. While costs are relatively easy to calculate, the notion that "cost" is a good indicator of benefits is fraught with pitfalls.

What is needed is a reorientation in thinking toward an emphasis on outcomes. Outcome-oriented planning in higher education simply means utilizing outcomes, results, and benefits as a primary basis for determining the directions for higher education.

The task is overwhelmingly difficult. But even in the face of the gigantic problems associated with defining, measuring, and analyzing the outcomes of higher education and with the recognition that the Center has only begun to scratch the surface, NCHEMS at WICHE believes that higher education is in a position to proceed with outcome-oriented planning.



Sid Micek,
Research Associate,
Ford Research Unit
NCHEMS at WICHE

"I am convinced," Wallhaus said, "that sound directions for higher education are possible only to the extent that planners and decision makers gain a better understanding of the possible outcomes of the various courses of action available to them."

Basic to the NCHEMS at WICHE outcome planning project is Micek's development of an inventory of the outcomes of higher education. Recognizing that a direct measurement of educational outcomes is difficult and often impossible, Micek will identify measurable indicators, or proxies, of outcomes. For example, some indicators for an outcome described as "vocational preparation" might be starting salary, earning power, job mobility, number of job offers, etc. The NCHEMS inventory will be distributed for review soon.

Dr. Robert Huff, director of the Center's training and implementation program, discussed "Negotiating and Decision Making with Program Budgets."

"Envision the typical college president of the '70s," Huff said. "He is under more pressures, or at least different pressures, than his counterpart of the

Dr. Robert Wallhaus,
Program Director,
Ford Research Unit,
NCHEMS at WICHE

Dr. Robert Huff,
Program Director,
Training and
Implementation Program,
NCHEMS at WICHE

1960's. He is being encouraged on many sides to implement planning and management systems in order to gain an improved understanding of how his institution actually operates and produces outputs. He is told that the new kinds of information derived from such a system can help him optimize his limited resources as well as satisfy the increasing demands for program cost accounting and budgeting information. He is inclined to believe that planning and management systems will help, but he wonders how he should proceed and how he can determine his institution's PMS capability."

Those who are considering planning and management system (PMS) implementation must first decide if such systems are really needed. If an institution has unlimited resources and there are sufficient funds available for all desirable activities, planning and management systems are not required, Huff pointed out. Today, few educators enjoy such luxury, and most are facing difficult decisions concerning which programs among a large number of worthy activities will be funded.

Implementation Requires Specific Prerequisites

Having decided that planning and management systems are desirable, an institution cannot proceed with PMS implementation unless specific prerequisite elements are present. The institution must have operational data systems from which the required data base can be derived. Personnel are required who have the analytic capability to learn about and maintain planning and management systems. The institution's organizational health must be such that it can smoothly incorporate the necessary changes for implementation. This will require a great deal of cooperation from many areas of the campus. Computer availability is necessary to manipulate data rapidly. Good PMS tools and techniques must be readily available. These tools must be complex enough to accommodate the institution's needs and still be relatively easy to install and use.

Finally, Huff said, successful implementation will never occur without fortitude and willingness to work. PMS implementation requires a good deal of effort as well as commitment of resources to the implementation tasks.

Programmatic decision making can occur only if appropriate kinds of information are made available. If an institution knows its objectives, it can define a course of action for the years ahead. Through use of a cost simulation model, it can forecast the resource implications of that plan. Student flow information will indicate which programs are most relevant to the needs and interests of the student population. Output measures can provide information related to the benefits or the value added to students and can be useful in identifying needed mid-course corrections in program design.

Planning and management systems can improve the management of resources allocated to higher education. PMS will not make decision making easy or eliminate the political considerations that will never cease to exist. Political pressures may be tempered in the future by the creation of more objective information, however.

"Higher education institutions will be difficult to manage even with the availability of the best planning and management systems information," Huff said. "Without such information, good management at a complex institution may be virtually impossible."

Dr. Warren Gulko, director of the Center's development and applications program, presented "Information Requirements for State Decision Making: New Approaches," in which he described the Center's recently released analytical tool, the Resource Requirements Prediction Model.

Gulko described the model as valuable in answering "what if?" kinds of questions. What if, decision makers are asked, a specific new program is added? What decisions need to be made on the basis of the resource implications of that addition? What if changes are made in the mix of the student body? What resource implications will such changes have on, say, library resources?

The resource implications of such questions as these and others can be examined through the use of RRPM. The RRPM is an institution-oriented, computer-based model that simulates the cost of operating a college campus over a ten-year time frame. It is designed to aid higher level management in rapidly determining the resource implications of alternative policy and planning decisions.

For any single institution the development of analytical models, particularly large-scale simulation

**Dr. Warren Gulko,
Program Director,
Development and
Applications Program,
NCHEMS at WICHE**

models, is an overwhelming and often prohibitive task in terms of difficulty and cost. With that in mind, NCHEMS has attempted to design the RRPM to meet the needs of a wide range of institutions without being overly simplified.

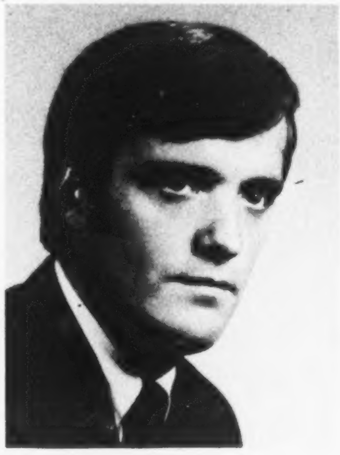
Operating with scarce resources, decision makers must evaluate the projected outputs of each program in terms of resource requirements and resource availability. Such evaluation and decision making require trade-offs between both the number of programs and their scale of operations. From a planning standpoint, this process is repeated until a set of programs is designed which provides maximum benefits in terms of the institution's goals and objectives in relation to its available resources. The RRPM system thus provides a mathematical conversion of program activity to resource requirements. It is designed to aid decision making by providing quantified estimates of the total set of resource requirements for the institution.

Gulko warned that RRPM is not a panacea for planning problems. Institutions can't simply plug it in and automatically solve their problems. It can lead to improved problem solving, however. The resource impact of current decisions can be predicted, and alternatives can be evaluated in terms of long-range implications.

A fourth small group presentation, "Tools to Aid in Higher Education Planning," was conducted by *Michael Young* of the training and implementation staff and *Richard Johnson* of the development and applications staff.

Cost Finding Considered

Among the analytical aids discussed was the NCHEMS at WICHE Cost Finding Principles and Procedures. This tool will allow decision makers to collect various cost information that will provide some of the information needed for pricing, internal resource allocations, cost comparison, cost benefit analysis, an understanding of the true cost of the education process, and planning. A cost finding "how to" manual is currently under development at NCHEMS.



Michael Young,
Staff Associate,
Training and Implementation Program,
NCHEMS at WICHE

Richard Johnson,
Staff Associate,
Development and Applications Program,
NCHEMS at WICHE

The Center's Program Classification Structure will serve as the framework for comparable data exchange and reporting, provide the basis for program budgeting, and serve as the format for the development of generalized analytical models. The first edition of the Program Classification Structure will be available in the spring.

The NCHEMS at WICHE Student Flow project will develop analytical models that aid in predicting student enrollments and in describing, through simulation, student progression through postsecondary education. Research in the area of statewide student flow will attempt to define the key elements of student flow at the statewide level and will involve an analysis of the predictive capabilities of various model definitions within the context of state-level planning for higher education.

Using hypothetical data, Young and Johnson displayed output responses from RRPM to a set of experimental questions that made such inquiries as, "What would be the effect of increasing faculty workload by ten percent?" and "What would be the effects of a change in the mix of faculty rank?"

Move to Practicality Seen

The Center's personnel returned from Phoenix both encouraged and discouraged. Discussions confirmed for most that NCHEMS at WICHE projects are headed in right directions; feedback also indicated that at the interface between NCHEMS and legislators, NCHEMS at WICHE must move more quickly and clearly from what legislators view as theoretical to what they consider practical.

Grateful for what they learned at Phoenix, many Center staff members are back at the drawing board.

In legislative consideration of accountability we are speaking of performance accountability — goal achievement as well as cost effectiveness.

I am not in sympathy with educators who feel they have to test and retest and re-retest, because they will never get the job done if that is the case.

The real problem of legislatures and governors is going to be the allocation of scarce resources. Higher education and other budget items will continue to suffer from shortages of state revenues.

What higher education must do, therefore, is increase the education return from each dollar of tax revenues.

One of the reasons that universities find themselves in the position that they are today is that they have not been held accountable for the behavior in which they used money.

John Keller closed with a suggestion that I find rather horrifying . . .

It is the finest data base that I have ever seen.

Planning and Management Systems From My Point of View

Moderator:
Dr. Roy E. Lieuallen,
Chancellor,
Oregon State System
of Higher Education
WICHE Commissioner
and Vice-Chairman

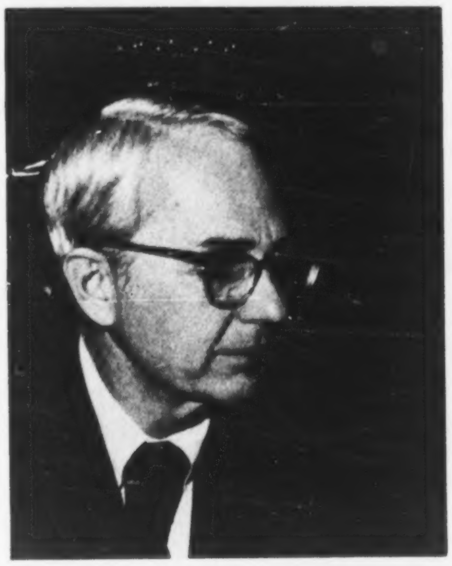
Planning Systems Must Above All Be Useful

By Alan Post

Planning systems today, in my view, should serve the needs of the legislatures by providing them with both planning for "survival" (reality) and against goals, the latter of perhaps greater interest to the academicians.

A system is only as good as it is useful; you can flood an area with so much data that the effectiveness of the system in assisting policy makers to make choices is destroyed. After all, there are limits as to how much information can be utilized in the legislative process, and it should be carefully developed to be applicable to decision points.

The real problem of legislatures and governors is going to be the allocation of scarce resources. Higher education and other budget items will continue to suffer from shortages of state revenues. This is a hard economic fact. The cost of government is going up faster than state revenues. This increase is largely due to the fact that what governments buy is primarily personal services, paid for at salary rates essentially competitive with those paid by the goods-producing industries in the private sector. The salaries in these industries have risen rapidly, and it has been possible to do this and still make profits because of the increasingly effective application of instruments of capital. Yet governments do not make equal use of such instruments and do not increase productivity correspondingly. The result is that we take a greater share of total personal income of the citizens and need tax increases to finance it. The legislatures and governors, however, are not able to persuade the public that these tax increases are needed. They must, therefore, cut budgets.



Alan Post,
Legislative Analyst,
California

What higher education, therefore, must do is increase the educational return from each dollar of tax revenues. It must try alternative methods of increasing such productivity — TV, challenge exams, increased classroom utilization, outside degree programs, for example. Alternatives must be suggested, tried, and evaluated. It is not enough to simply add dollars multiplied by increasing enrollments. Yet we desire to add to our enrollments by democratizing the admissions to our institutions.

The development of outputs for our systems must be paralleled by exploration of effective means for getting lower costs. We cannot spend several years developing sophisticated output measures and neglect the means for specific improvements in output. The two must proceed together. Legislatures have to make decisions on budgets now, and the scarcity of funds will not, in my opinion, get any better for years to come.

Unless higher education people tell their state legislatures how they will cut costs, the legislatures will tell them how. It would be better if the institutions provided appropriate information to assist in making the most intelligent accommodation to these budget restrictions.

Better Communication Is Primary Purpose of Systems

By Senator David Kret

Legislative decisions are made in an extremely difficult situation, in a limited length of time, and with limited funding available, and many people in higher education fail to appreciate this problem.

I believe that the main function of the management programs in NCHEMS at WICHE should be to develop better communication among and between the universities, higher education, and the state legislatures. Recognizing the fact that information systems can provide the tools for breaking of barriers and bridging of gaps, we also recognize the fact that these management information systems are tools and are not ends in and of themselves. Anyone who suggests that we should develop management information systems to make decisions in establishing policy is making a grand mistake.

As Dr. Lawrence has indicated, these systems are tools, and, as with any tool, they are only as good as the craftsman who is using them. A Stradivarius in the hands of a third-grade learner is going to make squeaks as god-awful as squeaks from a cheap $25 violin. That is the problem. The computer is useful. It can be a great tool. If used properly, it can be invaluable. In our space program, for instance, we have found that we were able to do things that could otherwise not have been accomplished because of the proper use of computers.

On the other hand, a computerized management information system is inordinately expensive if used improperly, if it is not used at all, or if its development duplicates other systems' developments. Particularly, I want to mention duplication. Right now, virtually all the universities in the country are developing management information systems. There is an attitude that you are not a first-class university if you do not have a third generation computer system, and each one wants to have the best and biggest installation and the latest hardware. Efforts to implement coordination and cooperation generally do not exist, and I think that, if NCHEMS does nothing else, it should bridge this area, bring the various universities together, and urge cooperation to eliminate a lot of duplication.

From the perspective of getting the job done, it doesn't make sense to reinvent the wheel. When I say I see a need to eliminate duplication, I mean that each new effort need not start from scratch, but can build upon the present state of the art, undertaking unique developments through cooperation and coordination of projects. Individual developments at the different universities would be welcomed, but their efforts must be coordinated. They must be coordinated within the state and among the states.

This past summer, many of us in Arizona sat on a committee on community college planning. We needed select data. Invariably, the information was not available, and while the staff went scurrying to develop the data for us, we waited. Now, I am not speaking about sophisticated data but the kind of information essential to any thoughtful planning: the total number of students and full-time equivalents we found in individual schools were counted differently. We were trying to make comparisons between states and found many differences. We wanted to find out how many students in our community colleges were working in the areas of vocational education as opposed to academic courses. We waited and waited and finally we got some data. However, most of us doubted the reliability of the data we finally got.

I think that in the areas of establishing standards and interchangeable data for information systems, NCHEMS can and should do a good job. Unfortunately, then, the communications gap rears its ugly head. An indication of what NCHEMS has been doing and of what progress has been made has not been fully communicated to legislators. Furthermore, legislators have not been involved in the decision making.

When Dr. Lawrence was speaking this morning, he said that there was a legislator who said, "We need help in the decision making process and we need it now. We are making decisions now." Come January in Arizona, we will have another legislative session, and we will be called upon to make decisions about allocations of limited resources. Any help that we can get to make better decisions is going

Senator David Kret, Arizona

to improve the result. Toward that end, this project can be most useful to all of us. I am not in sympathy with the educators who feel that they have to test and retest and re-retest, because they will never get the job done if that is the case.

We legislators look upon ourselves as the policy makers. We deliberate very much like the board of directors of a corporation. It is our basic responsibility to determine policy; then to provide necessary authority to carry out that policy; third, to appropriate necessary funding to fulfill legislative mandates and, finally, to require accountability. In our consideration of accountability we are speaking of performance accountability — goal achievement as well as cost effectiveness. After all, both legislators and educators should be able to work together to achieve the desirable benefits of higher education at the lowest cost to the public.

I, therefore, present the challenge to each of us, legislator, educator, budgeteer: evaluate and review the goals of NCHEMS, the possibility and desirability of those programs and assist in their perfection, help to present the necessary orientation to achieve their goals and, thus, we can make this management system truly a tool for the achievement of our mutual objectives. I am convinced that each of us has material contributions to make toward those achievements. Working at cross purposes, we have no chances of success. On the other hand, working together, dedicated to our common purposes, we cannot fail.

Greatest Benefit of Systems Approach Is Continuous Planning

By Dr. Stuart Brown

Dr. Stuart Brown,
Vice-Chairman
for Academic Affairs,
University of Hawaii System

Several years ago, the state legislature in Hawaii passed a piece of legislation containing a mandate to all of the state agencies to use PPBS and fixing the responsibility for introducing it upon the department of budget and finance. What I think that means is that the state anticipated a number of problems related to input and output measurements that we have been discussing here. The problem would not have solved itself nor would we have approached a solution to the problem without comprehensive legislation requiring that we get started. Consequently, we are deeply into PPBS at the university. We think we understand it, and we are not frightened by it. For example, some people believe that if a university undertakes to do the kind of planning that all universities must now undertake, the university will end up with something that will only differ from an adequate PPBS in name. The difficulty in university planning is that it has traditionally been discontinuous. It has been done a little bit now and a little bit then in response to crisis. Many of those crash plans have not been utilized, because they were not really thoroughly understood. That is what happens when university planning is done on an emergency basis. Planning has also been unrealistic. Faculties have wishfully decided the programs that they thought they wanted without taking account of the economic constraints and constraints in place and setting. The faculties did most of the academic planning, but they left it up to the legislatures to raise the money.

Now all of this can be remedied by an adequate PPBS. If the planning becomes continuous, something that is done daily and done in a rational progression by informed people, it may also be realistic in recognizing the constraints in time and place and money. Then the system will have meaning for the executive because decision making is a necessary part of it. Since this is the kind of PPBS introduced in Hawaii we are intimately familiar with it. I speak from first-hand acquaintance.

The effect of our PPBS efforts in Hawaii has been to make the legislature and the university more open with each other. PPBS is giving our legislators the kind of information that they need to be able to see the kind of planning that the university is doing.

But there are some things that John Keller said last night that I do disagree with and I would like just to say what those things are. You remember that his statements were organized about the following questions: What kinds of data do legislators want? What kinds of data do legislators need? How do legislators get the data they need?

He suggests in a number of places that the legislators want data that they don't need, data that they should not be interested in having. One of the sets of data he called unnecessary was what he called "objects of expenditures," things like the amount of money spent on typewriters at the school of business.

John Keller said, "Don't be interested in that type of expenditure, be interested in the program, the success of the program, and the benefit costs of the program." Now, if what John Keller meant to do was to remind us that we can be fooled and ask for the wrong kind of object of expenditures, it is a good reminder.

But we cannot so easily give up thinking about some of the costs with objects of expenditures. For example, a major cost of operating in any university is a payroll, the amount of money that the faculty is paid. Now salaries, as an object of expenditure, have to be considered in and of themselves, considered collectively and individually assigned to programs. You can't pay one group of people in one department substantially more or substantially less than you pay others in other departments. You cannot pay professors in a state university at a rate that differs radically from those of other institutions in the state. You have to be interested in the effectiveness of the faculties, how much they are teaching, how much public service they are doing, how much research they are doing. One has to be interested, therefore, in the objects of expenditures, and one cannot simply dismiss them. That's my first point of disagreement with John Keller.

Accountability View Missing

My second point has to do with what he said about how we get the data. You remember that he said one way we might get the data would be to have somebody like a legislative auditor go out and get it. Another might be to establish a kind of state Rand Corporation. He dismissed both plans as unwise and suggested that the best procedure for legislators is to develop a PPB system in cooperation with the institutions they work with. The reason, he said, is that the institution in its management has to have exactly the same kinds of data that the legislature wants.

But that, I think, takes the problem solely from the point of view of management. It does not take the problem from the point of view of accountability. One of the reasons that universities find themselves in the position that they are today is that they have not been held accountable for the behavior in which they have used money. It seems to me that the only way in which universities can be accountable, and can be kept accountable, is to hand the information to some agency representing the public and charged with responsibility of looking at the data, see how far they've gone, and look into the benefits. And this means that there must be some agency in the community capable of viewing the university to see if this public agency is doing a good job or not doing a good job.

Suggestion Horrifying

Finally, John Keller closed with a suggestion that I find rather horrifying, and I will read his comments. At the very end of his statement, he said that "Someone must sit down and prescribe what kinds of information on what kinds of forms will be generated by whom, to whom will they be sent and on what schedule, what kinds of actions will be taken by those receiving the information, and how in the end will the analyses done result in program decisions which are, in turn, faithfully reflected in actual budget allocations." He suggested that this might be a task that NCHEMS at WICHE might do. He further suggested that perhaps it might be a good idea for all state governments to have a single PPB system with this same kind of uniformity within the agencies. Now it seems to me that that kind of suggestion cannot be handled seriously. In the spirit of what universities are, a state university wants, to some marked degree, to express the spectrum of educational interests of the state. Each university must, therefore, in some sense be different from the other.

The state of Hawaii must differ on the educational check list because it is the state of Hawaii, an island state, where students cannot associate an automobile with a college education. It has special problems on which to do research, and it has special sites on which research can be done. It's got the best site for an astronomical telescope in the United States, and there are very few sites that compare. Educational objectives at different universities must be different, and that means that the academic arrangement must be different in some measure. The programs must be different and the program structure must be different.

What we should all have and share alike is a common data base that has been talked about; the data base that has been developed by NCHEMS at WICHE. And in connection with its use at the University of Hawaii, it is the finest data base that I have ever seen. I can get information that I could never get at Cornell where I worked before I moved to Hawaii. And that kind of base may, in the end, become common for measuring outputs. But what we don't want is the kind of unified system and kind of regimented system that John Keller recommended at the last of his speech.

SEVENTH LEGISLATIVE WORK CONFERENCE

Issues in Higher Education

33

The value of education is, in part, worth what someone pays for it. This is the axiom of the free-market economy.

Many states would like to find out if there is an educational product which is almost as good, but less expensive.

The question of relating technical and professional skills to the economy's need for skilled manpower is a particularly sensitive topic now with professional unemployment reaching new highs.

Getting Your Money's Worth In Higher Education

James Farmer,
Director,
Division of Information Systems,
The California State College System

Value of the Product

The value of education is, in part, worth what someone pays for it. This is the axiom of the free-market economy. But there are several questions which are being asked. Is the price too high? Many states would like to find out if there is an educational product which is almost as good, but less expensive. Many students would like to have a lower cost education — particularly those from low income families.

Value, then, is a judgment: On the part of a state, it is the judgment of the legislature and executive. The institutions can do two things to make the judgment somewhat less difficult:

- Identify the "products" of higher education
- Identify the costs of these "products"

Outputs of Higher Education

Some of the outputs of higher education were identified by the participants in a recent seminar.* Typical of the outputs identified were:

SOCIAL BENEFITS
- **Preserve the culture**
- **Perpetuate a technology-based economy**
- **Satisfy the social demand for education**

INDIVIDUAL BENEFITS
- **Social and intellectual growth**
- **Vocational or professional skills**
- **Personal satisfaction**

Note that it is not possible, at this time, to identify measurable outputs for most of these benefits. Only a few have any identifiable market value, and the traditional proxies — degrees and certificates — measure only one of the benefits. Perhaps one of higher education's more serious credibility problems has been the inability to articulate its benefits and their value both to society and to the individual. Some of the output proxies which can be used for the three outputs just identified are:

Perpetuate a technology-based economy
- Value of manpower
- Market value of research

Vocational or professional skills
- Degrees and certificates

Personal satisfaction
- Purchases of consumer education

Some of the outputs of higher education are the so-called joint outputs. For example, a research project will produce both research results and graduate students as an output. In some cases, the research results were the primary intended output — as in the case of sponsored research where the sponsor has a specific problem. In some cases, as in departmental research projects or student research projects, the student's ability to conduct research was the intended result and the research results themselves are secondary, though they may be important. This is a sort of "research" apprenticeship.

The question of relating technical and professional skills to the economy's need for skilled manpower is a particularly sensitive topic now with professional unemployment reaching new highs.

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*Ben Lawrence, George Weathersby, and Virginia M. Patterson, *The Outputs of Higher Education: Their Indentification, Measurement, and Evaluation*, Western Interstate Commission for Higher Education, Boulder, Colorado, July 1970.

Fortunately the economists' tools can be used in projecting the need for skilled manpower, and more flexible and more responsive institutions of higher education can perhaps make the professional work force more adaptive.

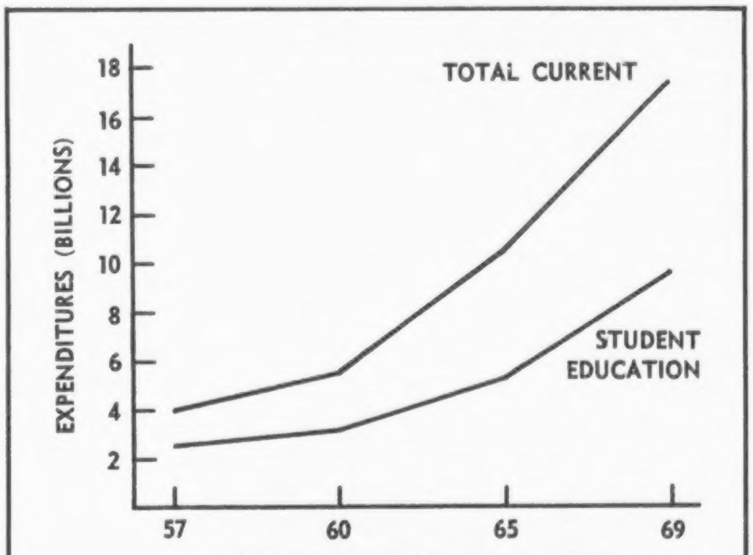
Yet, perhaps the most difficult outputs to measure, to plan, and to "produce" result from the intuitive judgment that education is good for individuals in our society regardless of their intended use of that education or their preparation for higher education. This goal will require different instructional methodology and perhaps different institutions, and the social benefits cannot now be measured.

Costs of Instruction, Research, and Community Service

While it may not be possible to measure what you buy when you pay for higher education, it is usually possible to estimate what you pay for it. Although it is both conceptually and practically difficult to cost research and community service, significant progress has been made on developing the costs for instruction.

It is useful to note the cause of the current fiscal crisis in education and the interest in costs.

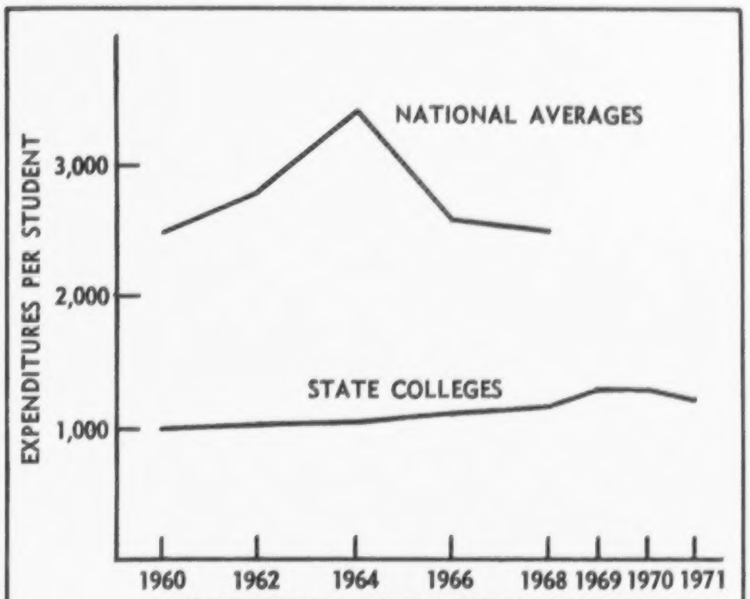
FIGURE 1



HIGHER EDUCATION EXPENDITURES

Consider the increases in expenditures for higher education (see figure 1). From some $4 billion in 1957 to over $17 billion in 1969, a constant increase at a rate greater than the increase in state revenues. With competing social programs, it is certainly understandable why state governments looked for ways to reduce the rate of increase of higher education expenditures.

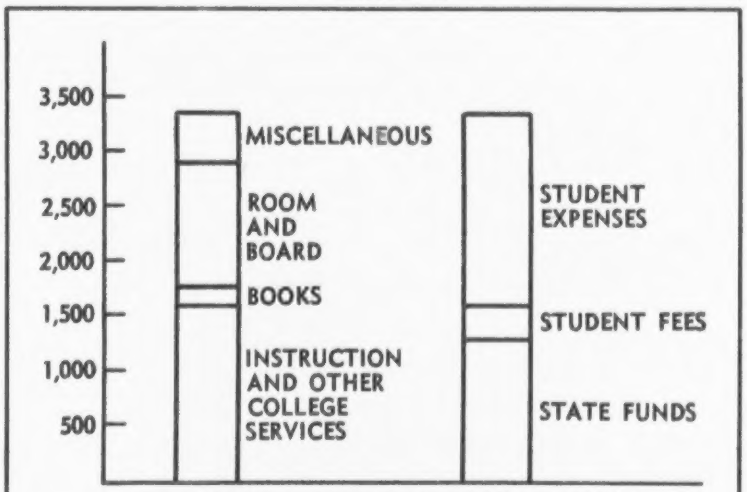
FIGURE 2



INSTITUTIONAL EXPENDITURES PER STUDENT IN CONSTANT 1969-70 DOLLARS

On the other hand (see figure 2), the situation has a markedly different perspective for educators. Because of the increased number of students and inflation, the cost per student has decreased in some institutions. For example, there was a decrease in available resources for the California State Colleges in constant dollars. Since 1969 the cost per student has decreased 15 to 20 percent. This represents both a decrease in output quality and increased efficiency. Thus, while the legislator has noted education as constantly and rapidly increasing, to the educator, the unit price has been forced down. This comes, in large part, from the increased enrollments as the participation rate in higher education has increased and the precent of population in higher education has doubled in the last ten years to more than 3.5 percent.

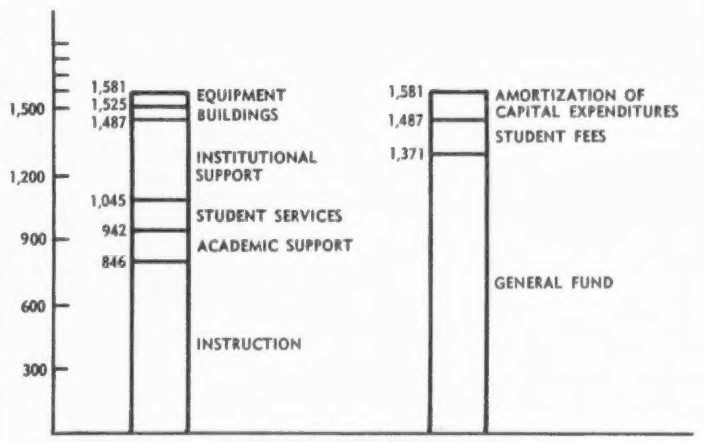
FIGURE 3



TYPICAL ANNUAL DIRECT COST OF EDUCATION FOR A RESIDENT SINGLE STUDENT

In discussing costs, it is important to identify cost "for whom" (see figure 3). We see, as an example, the costs of higher education for a single resident student at San Fernando Valley State College. This 1968 study indicated that the cost was approximately $3,300 for an academic year. About $1400 was paid by the state, and the remainder in student fees and student expenses was borne by the student or his parents. This does not include, of course, the opportunity costs of not being employed for this time.

FIGURE 4



COST OF INSTRUCTION AND
OTHER COLLEGE SERVICES

Figure 4 shows the cost of instruction taken from the same study. The total cost of instruction was $1,581 including a six-year depreciation of equipment and 50-year depreciation of buildings. The right hand column shows that the state general fund provided $1,371 for each student in current expenses and $94 from amortization of capital expenditures. Typically, $116 per student was provided by student fees.

FIGURE 5

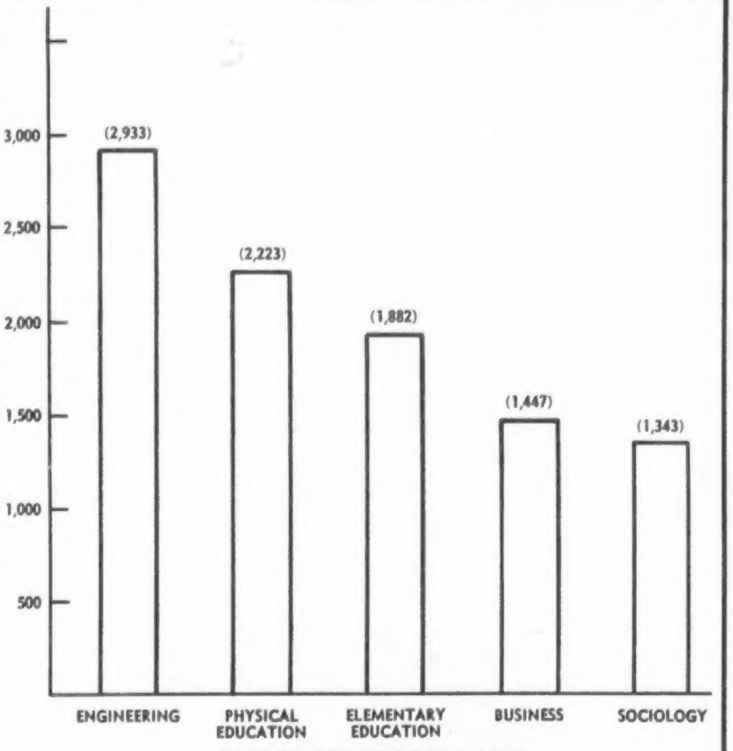
Instruction	$ 809	53.2%
Academic Support		
Library	127	8.3
Audio Visual	4	0.3
Computing Support	10	0.7
	141	9.3
Student Service		
Counseling	17	1.1
Financial Aid	5	0.4
Foreign Students	1	0.1
Other	64	4.2
	87	5.8
Institutional Support	483	31.7
	1,520	100.0%
Financial Aid	81	
	$1,601	

ANNUAL COST PER FTE

Figure 5 provides data from a similar study and shows the expenditures, or costs, per full-time equivalent student. This kind of costing — average full-cost per student — can be accomplished in a teaching environment with no identified research. Note that instructional expenditures make up more than 50 percent of the total. The instructional costs are frequently higher at smaller institutions with a rich program offering — because of the small class sizes, and at some larger institutions when administrative expenses become high — Illinois reported several institutions now have administrative costs of 50 percent or more.

This kind of costing — by program components — is feasible and can be inexpensive for community colleges and four- and six-year colleges. Universities have the additional conceptual problem of allocating expenditures to research and instruction. The costs shown in this report were developed using the NCHEMS at WICHE Program Classification Structure in one of the cost studies piloting cost finding principles.

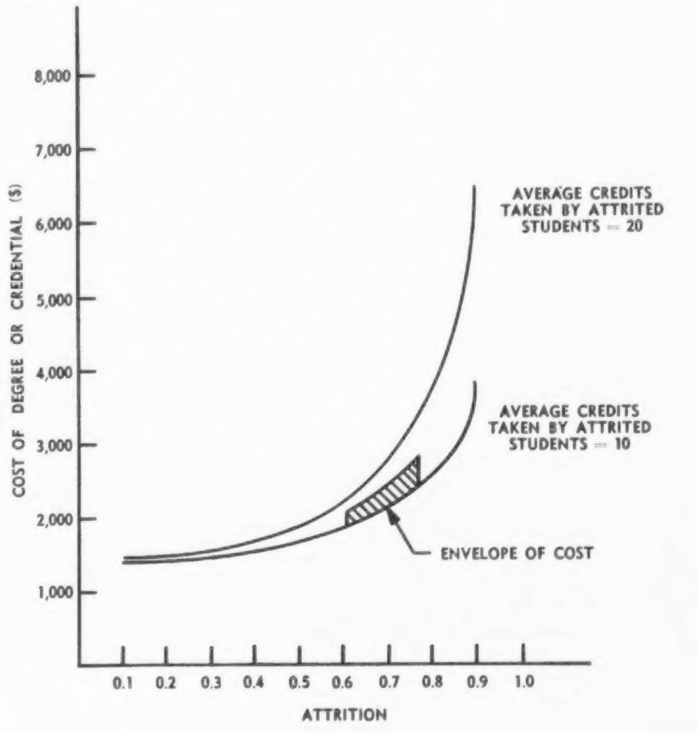
FIGURE 6



COST BY FTE STUDENT MAJOR

The use of an Induced Course Load Matrix — a description of the demand for courses by each student major — provides a method of transforming unit costs of instruction by department into cost by student major. Figure 6 shows cost by major taking into account the courses required by the average student for that major.

FIGURE 7



COST OF DEGREE OR CREDENTIAL
Vs. ATTRITION

UPPER DIVISION/GRADUATE SPLIT
OF CREDITS TAKEN BY
ATTRITED STUDENTS IS 75/25

The cost of a degree is somewhat more difficult to identify, particularly if the attrition rate is unknown. Figure 7 shows how attrition rate and the number of credit hours taken by a student leaving without a degree affects costs. After two years, the cost for a master's degree or credential for students at this state college will be between $1,800 and $2,800 depending on the final attrition rate, which may include transfers and those who just wanted a few courses, and the number of credits those students take. Based on the underlying data, this will be not less than 10 credits and may be as high as 15 credits.

Summary of Capability

Clearly, it is difficult to identify the outputs of higher education; it is important that the effort to do so be continued for this is necessary to make rational decisions about resources. The NCHEMS at WICHE research effort should be continued, and institutions of higher education should be encouraged to try to identify these outputs. Out of this struggle should come improved understanding of institutional goals and missions. There are some proxies which should be measured and reported, and institutions should be encouraged to identify others. Cost methodology is emerging and costing studies, as indicated here, can be fruitful. While many short-run decisions must be made on marginal costs, average costs are useful at the state level. Estimates of degree costs can be made, and should be encouraged so that institutions will be conscious of the factors affecting degree productivity.

Encouraging Change and Significance in Higher Education

Dr. Harold L. Hodgkinson,
Research Educator,
Center for Research and Development in Higher Education,
Berkeley

How can institutes be encouraged to change and become more relevant? There are several key notions I would like to point out in response to that question. First is the use of the word *encourage*. I think that it is absolutely essential that every effort be made to set up structures that *reward* institutions of higher education that do a good job rather than setting up punitive systems. Higher education is run about as well as most other bureaucracies in the western world; generally, you get improvement in performance if you appeal to the self-interest of the participants. My second point about the topic is about the old warhorse word, relevance. Let me suggest that we substitute the word *significant* for relevant. Being able to find my toothbrush in the morning is a relevant activity, but not of any great significance. Similarly, the Ph.D. program in mobile home management at Michigan State may be a relevant program, but is it significant? Why should the university be doing it? Teaching driver training in the secondary schools is a relevant activity, but is there any reason at all why General Motors and Henry Ford should be denied the responsibility of educating people to use their products? What did the schools give up in their curriculum to put in driver training?

If higher education is to become more *significant* in the lives of students, some big changes will have to be made. They will cost money. Your constituents may not like it if, as a consequence of this greater significance, students become aware of the wide range of ways of life, of governmental and economic structures, and more aware and critical of how our society is using its human and natural resources. Is it a benefit to society if the young are exposed to material that will make some of them more critical of that society? I doubt if the NCHEMS at WICHE system can handle that one just yet. The use of machine technology, which was thought a few years ago to be the breakthrough on costs, has not proven to be much cheaper than conventional instruction. In addition, many students get bored with teaching machines, searching for some more significant component in their education; for example, someone to help them integrate their out-of-class experiences with what they are learning in classrooms, some way to tie it all together, to make some sense out of it all. At the moment, we have no one on most campuses capable of doing this.

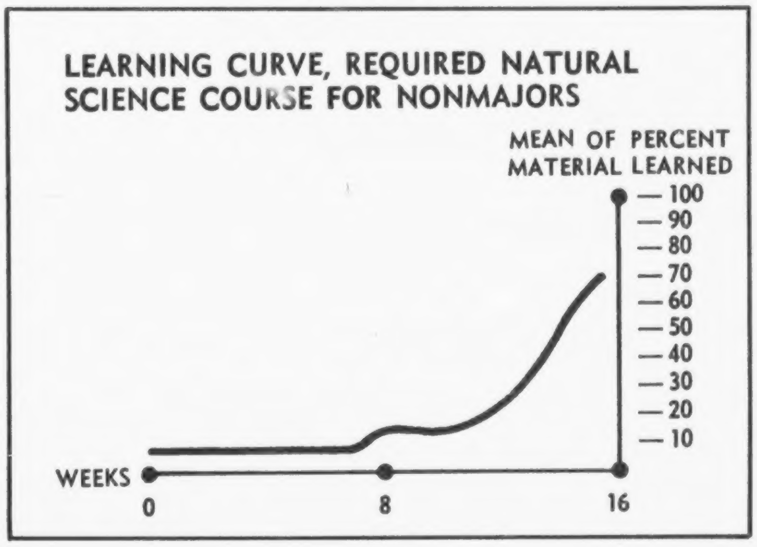
Is the act of simply teaching people a significant act? Not unless they remember the material and can transfer it to new situations. For example, most of the material learned in a required natural science course was learned in the last two weeks of the course, under pressure of failing the final exam (see figure 1). Following the students for sixteen more weeks, we note that they forget the material about as quickly as they learned it, and that they end up (see figure 2) remarkably close to where they began. The faculty insist that this course is absolutely essential for any American citizen who is to make intelligent policy decisions on scientific matters. (Perhaps all American elections should take place in the week between semesters, as that is the only time the students have control over the material.) Figure 3 shows the learning curve of an elective course in philosophy of religion. Notice that even after the course is over, the student's knowledge in philosophy of religion keeps on increasing! Such differences in course impact on students are simply not measured by the current planning and management output systems, and thus the significance of education cannot be dealt with. (In fact, in terms of cost per student credit hour, the science course is "better.")

Now for some specifics about change:

1. Change seldom comes about by getting everybody's views on everything and looking for consensus. Leadership is necessary, although it may emerge from any group on campus on any specific issue.

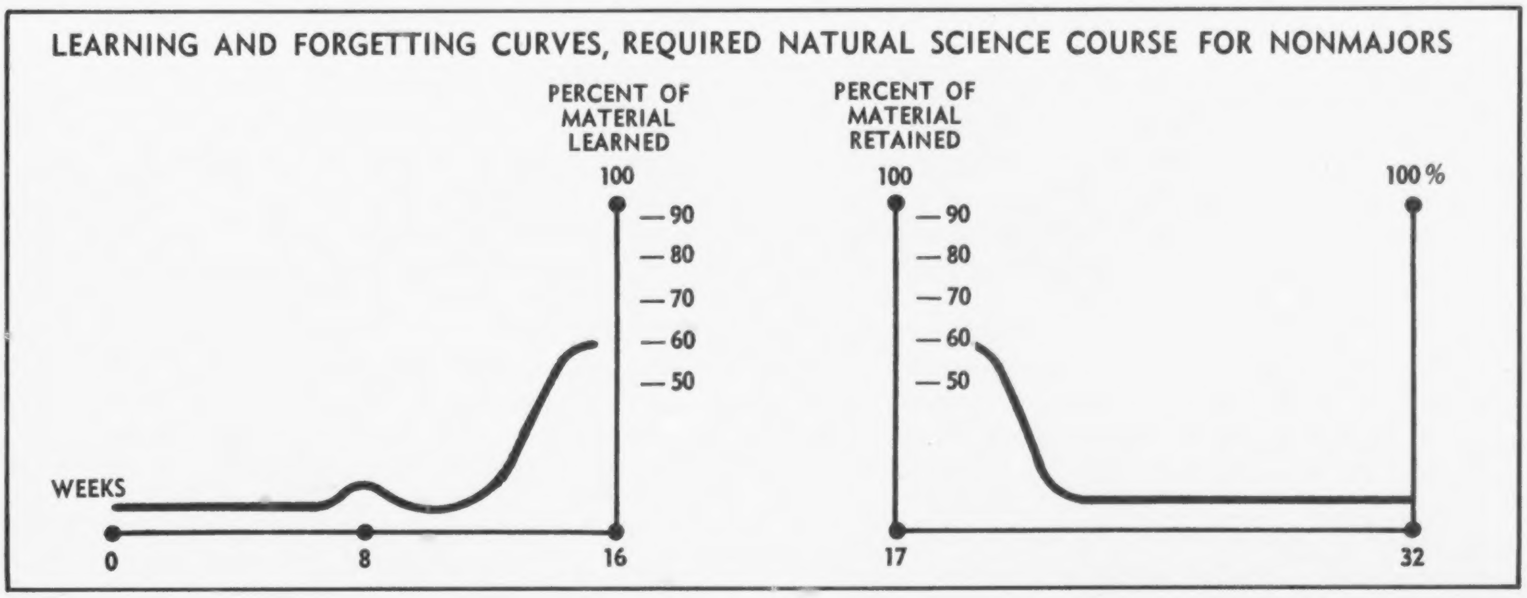
2. Smaller institutions are much easier to change that large ones; institutions are easier to change than statewide systems of institutions.

FIGURE 1



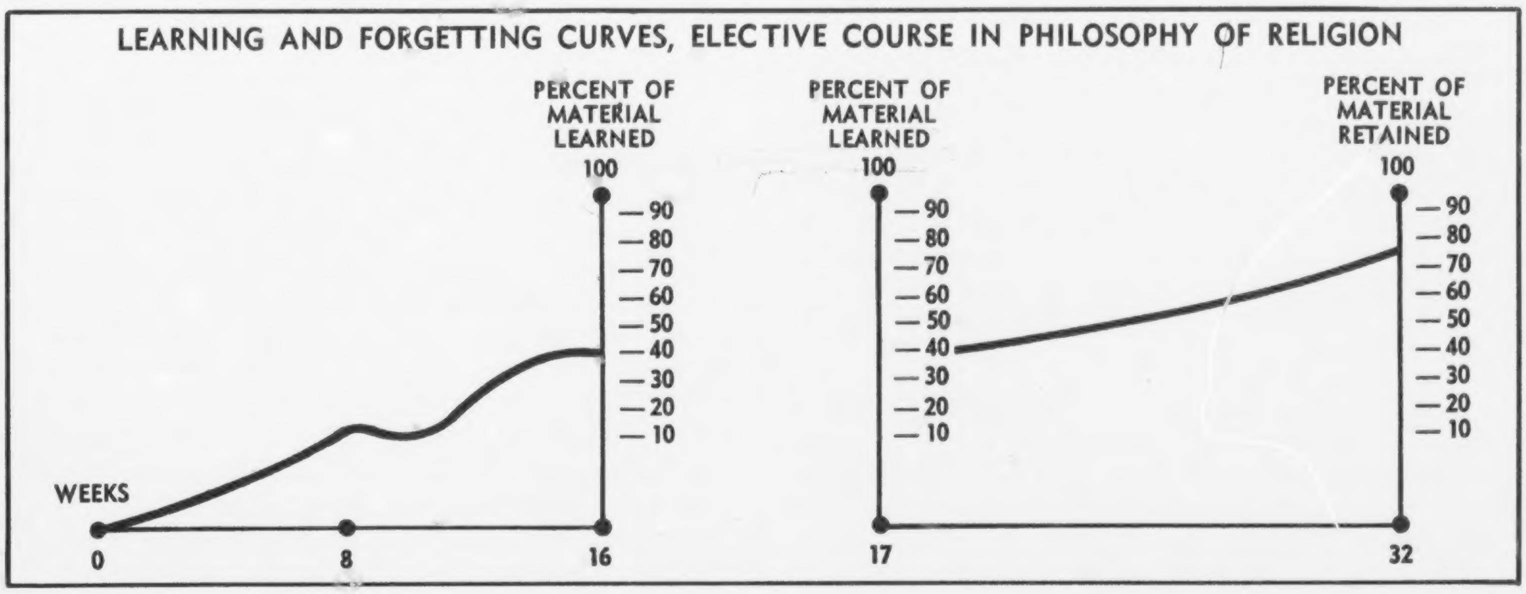
LEARNING CURVE, REQUIRED NATURAL SCIENCE COURSE FOR NONMAJORS

FIGURE 2



LEARNING AND FORGETTING CURVES, REQUIRED NATURAL SCIENCE COURSE FOR NONMAJORS

FIGURE 3



LEARNING AND FORGETTING CURVES, ELECTIVE COURSE IN PHILOSOPHY OF RELIGION

3. It is harder to change an institution in which a high percentage of the faculty is on tenure. (This is a major problem on many campuses — the years of shortages of college teachers in the fifties and sixties produced a rash of young men getting tenure at about the same time; this "age lump" now means that many younger people will not have any chance for tenure. If 70 percent of the faculty is both tenured and below the age of fifty (a not unusual occurrence) then nothing much can be done for 15 years or so, when this "age lump" retires. In the interim, many excellent young faculty will be rejected for tenure by some less able who have tenure, an unproductive situation.

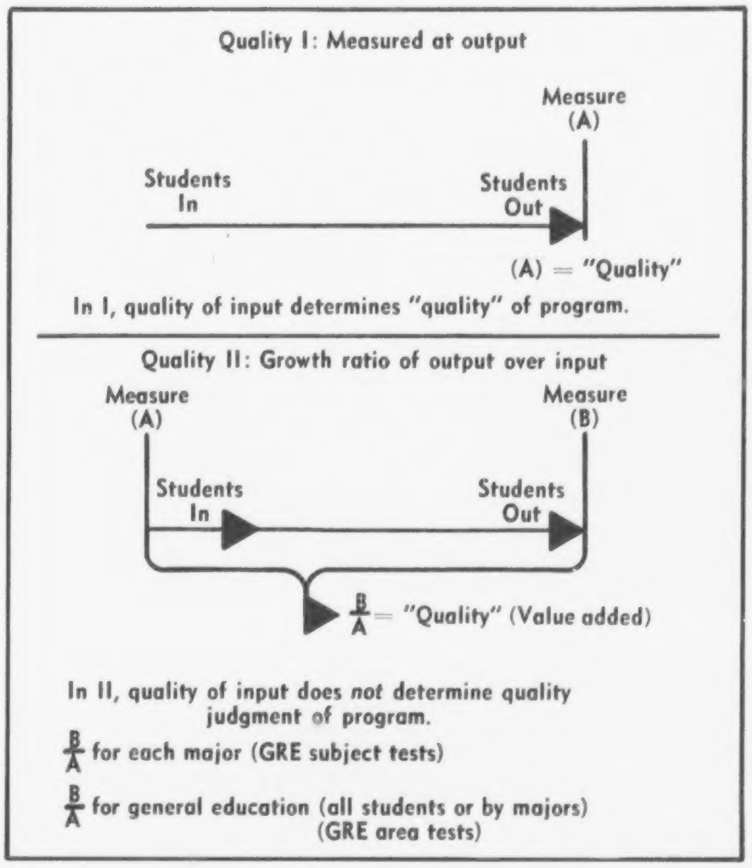
4. There is an increasing lack of diversity in higher education which was recently documented for the Carnegie Commission.* This "cookie-cutter" tendency is highly destructive of change, particularly for an institution that would like to do something very different, for the pressure to be just like all other institutions is getting much stronger. Real diversity of structure, program, and mission should be rewarded.

5. State colleges and community colleges can be kept as teaching institutions by providing a reward structure for those institutions that do a superior job of teaching. This can be done, not by measuring student competence at the end of four years (the brighter your admitted freshmen, the "better" the job you do), but by comparing student competence at entrance with student competence at graduation, both in the major area and in the areas of general education. Thus, the institution in which the most gain is shown is doing the best job and could be funded on a plus percentage basis (see figure 4).

To try to encourage good teaching by setting minimum hours of teaching, such as 15 for community colleges, 12 for state colleges, and 9 for universities, will not help; for the result will be a drastic cutback in faculty advising time, and faculty time spent with students outside of class may be just as important as time spent in class.

6. The *most* effective way of eliminating outdated offerings would be to eliminate outdated faculty. However, that would cause more problems than it would cure. A better approach would be to establish programs that would bring the faculty up to date, both in their subject area and in the teaching of it. There is currently almost no attempt to update faculty skills systematically. How many faculty have ever been helped to learn how to ask really penetrating questions of students? In my experience, very few know how. How many have ever watched themselves teach via video tape in order to improve their presentation? Again, not very many, although the technology is around. Departments that show evidence of trying to upgrade the teaching effectiveness of the department should be rewarded for it, even though their grant gathering may be off a bit. It is a major delusion to assume that all university teachers are engaged constantly in research and publication; something like 10 percent of the faculty do 90 percent of the publishing.

FIGURE 4


Quality I: Measured at output

In I, quality of input determines "quality" of program.

Quality II: Growth ratio of output over input

In II, quality of input does *not* determine quality judgment of program.

$\frac{B}{A}$ for each major (GRE subject tests)

$\frac{B}{A}$ for general education (all students or by majors) (GRE area tests)

7. In addition to outdated offerings there is the problem of outdated *programs.* These are even more difficult to get rid of than courses, particularly if the senior people are on tenure. In some campuses, pruning departments of classics down to meaningful size took a decade. One general solution is to hire as many multicompetent people as possible. Another is to move to a system in which a division structure (usually humanities, social sciences, natural sciences, performing arts, and education) assumes political and economic stature over departments. Thus the political science budget is not decided by the department of political science, but by a committee of representatives of all the social sciences, to put the departmental request in a larger perspective. Another approach (now in use at Santa Cruz) is the appointment of vice-chancellors in these

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*Harold L. Hodgkinson, *Institutions in Transition* (New York: McGraw-Hill, 1971).

divisional roles, with real economic decision-making prerogatives, as a counter to departments, which often will not prune books in the library nor courses in the major.

8. Many institutions judge their status by their graduate programs. Today, there are few graduate programs that are cutting back on admissions, even though they know that there will be few jobs for their graduates. But graduate programs are usually dominated by departments, not by the dean of the graduate school. Some system of checking unrealistic graduate program growth is essential, perhaps one like the divisional vice-chancellors already mentioned.

9. Consensus politics is a tough game to play with a faculty, as they are trained to see dichotomies, paradoxes, and contradictions where others see only a simple truth.

There is on most campuses an overabundance of committees, many of whose function is highly questionable, except that they manage to generate enough work to justify their own continuation. In some institutions where faculty are given released time for committee service, you could add 100 courses to the undergraduate curriculum simply by cutting the committee structure back. (Committees are often used to share the blame with administrators and to diffuse accountability.) Some schools are now assuming that committees will function for one year only, and the whole structure is reviewed each September. Others have moved to increased use of ad hoc task forces and committees that meet to work on one problem and then disband. There is discussion from George Weathersby and others of "trial balloon" management, in which administrators once again make decisions, but do so on a trial basis — the decision stands if no one objects before a certain date.

10. One way to encourage faculty growth is the so-called growth contract, in which each member of the faculty (including those on tenure) is asked to sit down once every five years and state what he would like to do in the next five year period. The institutional representative indicates what resources the institution will provide so that the faculty member can achieve his goals, and they agree as to what will be a fair evaluation of whether or not the faculty member has achieved those goals. Then they both sign the contract. In this way, the institution indicates to the faculty member that it expects growth and change and will try to plan for it in a systematic way, building around faculty aspirations. This plan could be put into effect tomorrow, even in institutions with tenure systems.

Here are just a few of the many specifics involved in trying to change institutions of higher education. In closing, let me say that your desire to make sure that the public is getting the most out of its huge investment in higher education is commendable. But do not confuse cost per student credit hour with education. We need to develop some better measures of the *significance* of education in colleges and universities. The techniques are already here, we have only to merge them with the economic and logistic criteria now integral to planning and management systems. But this may be more of a job than we bargained for, as some of the management information systems have shown themselves to be as resistant to change as the academic departments they were designed to change. To people who have never taught or administered in a college or university, a cost per credit hour figure may look just fine. It *is* a nice figure. But it has nothing to do with education.

Academic Freedom and Tenure in Higher Education

Professor Arvo Van Alstyne,
School of Law,
University of Utah

A review of recent literature relating to the problems of tenure in higher education discloses two major trends: (1) The system of academic tenure is presently under sustained criticism to a degree probably exceeding that experienced during any prior period in the half century or so during which institutionalized tenure systems have existed in American higher education. (2) Academic freedom on American university campuses is under attack in every part of the nation. Many professional educators regard the coincidence of these two challenges as far from coincidental. Be that as it may, the dual nature of these pressures underscores *the intimate interdependence between tenure and academic freedom.*

Much of the discussion of tenure in the media, in legislative chambers, and on college campuses as well seems to be characterized by a degree of emotionalism which is ordinarily in direct proportion to the speaker's misunderstanding of the subject. I freely assume that those of us gathered here today are sincerely interested in seeking understanding rather than more heat. I willingly recognize that none of us is like the judge who ordered counsel to stop arguing his case, declaring, "My mind is already made up. Stop confusing me with the facts."

An objective search for understanding in this area, I would like to suggest, should concentrate upon five basic questions:

1. *What is the purpose of academic tenure?* The predominant concern of the tenure system, without the slightest doubt, is to safeguard the public welfare by protecting academic freedom while assuring academic accountability. A secondary but purely incidental function of the tenure system — important at certain periods of time in the past but, currently, in light of the over-abundance of job seekers in the academic market, probably of little practical concern — is the enhancement of the attractiveness of the teaching profession in order that it may bring to its ranks the best qualified and brightest minds available. For present purposes, therefore, it seems appropriate to confine our discussion to the primary purpose of tenure — the protection of academic freedom.

2. *What is academic freedom, and why should it be protected?* Like most other freedoms cherished by Americans, it is difficult to formulate a nonambiguous and completely satisfactory definition of academic freedom. It seems reasonably clear, however, that its central concern is the promotion of the common good by providing protection against external and institutional influences that may inhibit students and scholars in seeking, expounding, and disseminating ideas in every realm of human thought. As Sterling McMurrin has eloquently said, "Academic freedom is the encouragement to adventurous, creative, and innovative thought, the condition and inspiration for genuine intellectual and artistic achievement."

Implicit in this concept of academic freedom, of course, is the notion that the authentic function of institutions of higher education is to advance truth, strengthen cultural integrity, cultivate critical intelligence, and assist in the improvement of the quality of personal and social life. Fulfillment of this responsibility, however, necessarily implies a continued examination and objective appraisal of the validity of accepted values, established theories, and traditional practices. Such an examination may at times create tensions between the academic community and elements within the larger community which it serves. Academic freedom is thus seen as a protective principle designed to safeguard society's long-range interest in free critical inquiry and intellectual progress from the chilling effects of short-range efforts at censorship and reprisal.

The university simply could not discharge its appointed role if its faculty were constrained to seek either the safety of silence or the ambiguity of indecision in matters of intellectual concern. The principle of academic freedom thus seeks to insulate the academic community from intimidation and repression of ideas which are bold, challenging, and unpopular. It embodies society's rejection of coerced conformity and its acceptance of intellectual diversity as a primary instrument of higher educational policy. Moreover, it is becoming increasingly clear — and recent court decisions, including some from the United States Supreme Court, have recognized — that academic freedom is closely related to the constitutional system of freedom of expression rooted in the First Amendment of the Bill of Rights. Many thoughtful observers would, I am confident, agree that academic freedom is worth preserving. Many, I am equally convinced, would agree that if academic freedom were to disappear, the university would be effectively destroyed, to the tragic detriment of society as a whole.

3. *What is the tenure system and how is it related to academic freedom?* While there are many forms of academic tenure, all of them are based upon a relatively simple concept: Once a faculty member has demonstrated responsible professional competency over an extended probationary period, he cannot thereafter be dismissed from his professorship except upon proof by the administration that adequate cause for such dismissal exists. Adequate cause, in this context, includes academic incompetence or irresponsibility, medical disability, discontinuance of a program or department of instruction, or bona fide financial exigency.

Most tenure systems include a hearing procedure at which the institution must adduce evidence supporting dismissal on one or more of the indicated grounds. Protection of academic freedom arises from the fact that the burden of proving adequate cause is on the institution. In the absence of evidence that appropriate academic grounds do exist, a natural inference arises that the real reasons for dismissal are reasons which violate academic freedom or related constitutional interests. It is precisely to prevent such arbitrary dismissals, formally dressed up in unsubstantiated charges of incompetency, that state and federal courts alike, in recent years, have insisted that the procedures employed in faculty dismissals at state institutions of higher education must conform to minimal standards of due process of law.

4. *What are the chief defects of the tenure system?* Criticism of the tenure system should not be confused with actual defects in the system; an indictment is still not an automatic conviction. In fact, I submit that much of the popular criticism rests upon certain unstated assumptions that reflect misconceptions or myths about tenure and its implications. Among the most important popular misconceptions are these:

Tenure Not Unique to Education

First, tenure is erroneously believed to be a special privilege uniquely enjoyed by college and university faculty members. In fact, however, tenure represents a rule of fair play and justice which is far from being either unique or special. Some form of tenure is characteristic of most employment relationships in our society, including the civil service or merit system for governmental employees, seniority or job security plans incorporated into collective bargaining contracts, and profit-sharing or stock option programs for business executives. Even the independent learned professions, such as medicine and law, enjoy professional tenure in the form of a license to practice that can only be revoked or suspended for good cause.

A second misconception is that a professor may acquire tenured status by mere passage of time in his position without regard for professional competence or academic responsibility. In fact, it is far from easy for a new faculty member to acquire tenure. He can do so only by demonstrating to the satisfaction of his colleagues and the university administration over an extended probationary period (ordinarily from five to seven years in length) that he is fully qualified on the basis of teaching effectiveness, scholarly achievement, and university service. The burden of proving eligibility for tenure during this probationary period is upon the individual faculty member, and a significant number of probationary faculty do not succeed in doing so. In addition, some probationary faculty members regularly leave university teaching when they perceive the unlikelihood that they will obtain the required favorable recommendation of their colleagues at the conclusion of the probationary period. It should not be forgotten that at the conclusion of the probationary period, a professor who fails to achieve tenure *must* be dismissed. Tenure is a classical example of the old Navy slogan, "Shape up or ship out."

A third misconception is that nearly all university faculty members enjoy tenure. In fact, in higher education, the number of tenured faculty members is usually a minority. For example, the study made in 1970-71 at the University of Utah disclosed (to the surprise of the Tenure Study Commission) that only 19 percent of all instructional personnel actually held tenure at that institution as of February 1971. While the percentage of tenured faculty will vary from institution to institution, most of the figures which have come to my attention suggest that the percentage rarely rises above 50 percent. In publicly-supported institutions in the western states, in particular, a relatively low percentage of tenured faculty seems likely to be typical, because of the extensive use of nontenured teaching assistants as a means of instructing large numbers of undergraduate students.

A fourth misconception about tenure assumes that a faculty member who has achieved tenure cannot be dismissed from his position. In fact, the tenure system does not preclude the dismissal of tenured faculty for appropriate academically-related causes, including professional incompetence or irresponsibility, or for other reasons not in violation of principles of academic freedom. While most studies have indicated that the full panoply of tenure dismissal procedures seldom is used, this should not be construed to mean that tenured faculty members are seldom removed from their employment. Substantial evidence was presented to the Tenure Commission at the University of Utah indicating that tenured faculty members had been removed from the university's employ through informal methods leading to their voluntary resignation in lieu of formal dismissal. The important point, which deserves to be emphasized, is that nothing in the tenure system necessarily protects incompetence, irresponsibility, or redundancy.

Dead-wood Not Attributable to Tenure

The persistence of academic "dead-wood" — and I would be less than candid if I did not freely concede that some academic indolence and incompetence exists on practically every faculty, although in relatively small percentage — must be attributed to factors other than the tenure system itself. Such factors are not difficult to identify. They include administrative inertia, humanitarian instincts, and an understandable, although indefensible, feeling on the part of some faculty members that they would rather not get involved in the somewhat unpleasant procedures necessary to the discharge of an incompetent or irresponsible colleague.

5. *Can a better system be devised for eliminating incompetence and irresponsibility among faculty members without impairing academic freedom?* The most radical suggestion which has been advanced for dealing with the problem of academic "dead-wood" is the total elimination of the tenure system. This approach, I think, would be legislative overkill, something like throwing out the baby with the bathwater. If elimination of tenure means that faculty members will hold their positions at the pleasure of the university administration, the system will in all likelihood be both unconstitutional, under prevailing court decisions, and highly destructive to the effectiveness of higher education. It is clear that the national academic community would regard such a move with utmost disfavor as a blatant attack upon academic freedom and that both faculty recruitment and research grantsmanship would be seriously impaired.

Academic Freedom Assaulted

I should remind you again that the academic community is currently quite sensitive to the increasing frequency with which assaults upon academic freedom have been mounted in recent years, often from unexpected quarters. Efforts from various pressure groups to silence faculty members who express unpopular views have continued unabated, and vigorous efforts have been made to curtail open campus-speaker policies and impose conformity of ideas upon the academic community. Even more deplorable and shocking, however, has been the use of violent and destructive tactics by dissident groups on college campuses, ultimately aimed at destroying the academic freedom of students and faculty and resulting in much loss of property, many injuries, and some actual loss of life. The President's Commission on Campus Unrest, headed by former Governor Scranton of Pennsylvania, pointed out in its report that ". . . both external and internal threats to academic freedom have increased as the nation has become more sharply divided." Accordingly, the commission report urged the academic community to devote increased ". . . resistance to pressures toward conformity" and to demonstrate a ". . . steadfast commitment to combat dogmatism, intolerance, and condescension, as well as attempts to suppress divergent opinions among its members."

A second alternative, sometimes advanced, takes the position that the judicial system can and will effectively protect academic freedom, thereby making the tenure system no longer necessary for that purpose. This proposition, I submit, is of dubious validity. To be sure, in recent years, the U. S. Supreme Court has commenced an examination of the constitutional implications of academic freedom, but the law in this regard is still in its formative stages. It is now reasonably clear that both faculty members and students are legally entitled to at least a minimal degree of constitutional protection against interferences with their freedom of speech by public officials, including the administrators and governing boards of public institutions of higher education which employ them. But it will probably require many years for the courts to develop a reasonably comprehensive and reliable jurisprudence of academic freedom. In the meanwhile, the judicial system can only be expected to provide peripheral support for a system of academic freedom fully adequate to educational needs. Moreover, litigation can be both costly and time-consuming; and court procedures are an inherently inefficient process for resolving the kinds of disputes likely to arise within the educational community.

A third alternative to tenure involves substituting fixed-term renewable contracts instead of permanent tenure for faculty members. Some institutions (such as Hampshire College) are currently experimenting with a system of this sort, but preliminary indications suggest that serious difficulties of implementation remain to be resolved. It is becoming clear, for example, that if the decision to renew a short-term teaching contract is entirely in the discretion of the university administration, the system is not functionally different from an outright abolition of tenure. After all, a decision not to renew a contract for reasons that are violative of academic freedom is not functionally different from a decision to terminate employment for similar reasons. On the other hand, if the renewal of a term contract is dependent upon evaluation of teaching effectiveness, and renewals are normally granted unless the administration demonstrates lack of academic competence or responsibility, the system is not significantly different from the current tenure system.

Collective Bargaining Introduced

A fourth alternative, which seems to be growing daily in its practical importance, is the organization of faculty unions and institution of collective bargaining over conditions of employment. In parts of the United States, the movement toward faculty unionization is rapidly moving ahead. Collective bargaining systems are already in effect in some of the major universities along the east coast, including Rutgers, St. Johns University, and the State University of New York; in addition, concerted efforts are reportedly under way to achieve similar systems in Michigan, Illinois, California, and elsewhere.

Unions and collective bargaining, however, are not universally popular in the academic community: Many experienced university teachers entertain serious doubts whether the collective bargaining process can adequately protect the community's interest in higher education, and, particularly, whether it is capable of implementing academic freedom in an effective fashion. In addition, a collective bargaining process can seriously reduce the flexibility with which a university administration can reward excellence and provide incentives to improved academic performance. At the same time, collective bargaining procedures may tend to polarize viewpoints, rigidify bargaining positions, delay resolution of disputes, and induce resort to pressure tactics — such as strikes, picketing, slow-downs and boycotts — in an effort to influence negotiations. Confrontations of this sort are likely to impair the interest of students, taxpayers, faculty, and university alike. By way of contrast, the existing tenure system provides a time-honored institutional mechanism for dealing with problems of faculty incompetence or irresponsibility in a professional and individualized manner that is conducive to avoidance of the politics of direct confrontation.

A practical solution to the tenure dilemma, as proposed by the Tenure Study Commission at the University of Utah, involves three approaches:

(1) The legitimate expectations of the university as to acceptable standards of faculty performance and responsibility (which are often imperfectly understood by faculty members as well as by private citizens) should be clearly articulated in a code of faculty conduct and responsibilities. A code of this type, it is submitted, would not only assist materially in promoting more effective faculty performance, but also should serve to dispel the kind of administrative inertia, often claimed to be based on ambiguity and uncertainty as to the applicable standards, that resists the taking of disciplinary proceedings against unsatisfactory faculty members.

(2) The university should undertake to develop a comprehensive career development program for all faculty personnel, including both tenured and nontenured positions. The purpose of the program would be to prevent decline and blight in academic performance by identifying personal career problems, providing professional assistance in maintaining capabilities, and stimulating personal self-renewal where necessary. The program would also seek to devise a reward system which induces life-long effort in the quest for excellence of academic effectiveness.

The theory underlying this recommendation is that the relationship between professor and institution is one that involves mutual commitments. Accordingly, if a professor begins to fail in his obligations to the academic community, often through no intentional default on his part, the university should undertake to provide rehabilitative and correctional assistance for the mutual benefit of both parties. The public interest, it is believed, would be substantially advanced by a program of this sort, properly structured to promote life-long improvement in professional competence, employment of the most effective teaching methods, stimulation of professional aspirations, enrichment of the opportunities of academic life, and renewal of individual creative commitments to the purposes of the university. Such a program, moreover, by affording a more humanitarian way of dealing with suspected incompetence, short of dismissal, would also serve effectively to eliminate administrative reluctance to deal with such problems in ways leading to ultimate dismissal of non-responsive faculty members.

(3) Each campus should develop a well-structured system for receiving and processing complaints of ineffective faculty performance in the classroom, or of other forms of faculty irresponsibility. Such a system, which, for example, might entail the establishment of a university ombudsman (modeled after the Scandinavian public complaint officer), should emphasize highly visible and reliable procedures for the informal processing of grievances, reconciliation of misunderstandings, and rectification of inequities at a preliminary level of administration, so as to avoid wherever possible the necessity for more elaborate consideration. Meritorious complaints identified as being more serious should, by appropriate procedures, be introduced into the formal process leading to imposition of sanctions, including possible dismissal.

Improvements in the administration of the tenure system, such as those just outlined, should go a long way toward meeting the valid aspects of current criticisms of the tenure system. A program of this kind, moreover, is a more responsible and constructive way to deal with the problem, and one far less destructive of basic educational values.

Trends in State Planning and Coordination of Higher Education

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What are the current social, political, and economic trends? What import do they have for those who plan for higher education? What are the consequences of pursuing certain courses of action as against others into an uncertain future? What attitudes and stances should we adopt?

Once the facts are known, few will question the validity of the first of the several major trends I shall mention. This one relates to the size of the college-age population. We know that the young people who may attend college from now until about 1990 are already living creatures. We also know that the birthrate is now at the lowest point in the nation's history.[1] Enrollments as a whole are not likely to increase after 1977-78, and that for ten or more years thereafter they will inevitably diminish. Allan Cartter stated in a recent paper, "Few people realize that the under age five population in 1969 was 12 percent below its 1965 level; when that age group arrives in college about 1980 it . . . will be able to pick and choose among hundreds of institutions suffering from an acute excess capacity."[2]

Exceptions to the general enrollment trends will occur within each category of institution, but the exceptions will be much larger than most faculty members or administrators are willing to believe or face up to. Make no mistake, enrollments will soon level off. For example, the South Dakota system reported enrollment in the state was down two percent despite an increase in the number of college-age youth. In Illinois the total enrollment in the state's colleges and universities dropped one percent this fall and in the largest institutions, over five percent. Total enrollment at the University of California's nine campuses did not change, although an increase of 4,000 had been predicted.[3] Thus, adjusting to slow growth or no growth is and will be the order of the day.

The second trend may seem less clear to some, but I am quite sure that with the exception of a few states, the proportion of the state budget going to higher education will be no greater in 1980 than it will be in the next year or so, whether we have boom times or bad, or Republicans or Democrats in office. Some states are already at this funding plateau. Others will quickly reach it. If funds increase, it will be as a consequence of a generally larger state income, not because higher education was allotted a larger percentage of the state revenue. However "bullish" the economy, there will be insufficient funds to expand the budgets of higher education at previous rates. Thus, slow growth in state general revenue funding over the long haul is an optimistic prediction.

This disturbing assumption, that higher education will not get a larger proportion of state income, is supported by two other trends. One is the current disillusionment of the public and the politicians with higher education, especially the universities. Although my research this past summer in eight key states tells me that the disaffection which permeates attitudes and appropriations is likely to be short-lived,[4] by the time grace and confidence is regained, the politicians will be well aware of the leveling off of enrollments. Given this awareness, support by the state is not likely to increase greatly, and then only in specifically planned areas of expansion.

The other trend which forces less funding growth for higher education is the establishment of a new set of social priorities among which higher education has dropped from the top of the "top ten" to a much lower position.[5] Health care, the common schools, the environment, and recreation, among others, are surfacing as high priority concerns in the legislature of nearly every state. Unless some national catastrophe befalls us for which higher education is believed to be the principal salvation, the colleges and universities will not regain their favored position of the 1960s — at least not during the next 20 years.

The condition of private education will increasingly affect the funding levels of the public systems. In more than half the states it does already. The pleadings of the private segment for state financial aid is gaining ground[6] — not nearly enough to save some of them financially — but enough to reduce the direct level of funding for the public institutions. State scholarship, grant, and loan programs, as well as direct grants to private institutions, are all funded in the state budget from that same single total amount for higher education. If new activities and additional institutions are to be funded it will be out of the slice of the pie already being cut. The proportion of the state budget for higher education, no matter who or what it is to cover, will remain about the same.

Another major trend, almost inevitable over time because of financial conditions, is the one toward forcing the student to pay more and more of the total costs of his education. With the state revenue share leveling off, even the public colleges and universities have reluctantly raised tuitions. The trend will continue. The many plans being put forward for obtaining full cost from the student are gaining support. Although most of these plans seem dead for the moment, the idea of a student either paying full cost as he attends college or paying back the full cost of his education out of future income will take hold. However unfortunate this appears to some of us, it may be the principal means by which both public and private institutions can raise their level of support. In many states even this device will not increase the support level of the public institutions because legislators will use income from students as an offset against the state contribution. Most states already appropriate such income, but in the future it may become the means for reducing the size of the state slice rather than maintaining it, as has been done in the recent past.

Many of us quickly read this trend as denying equal access and equal opportunity to the low income family, of whatever ethnic or racial background. And although financial barriers to college entry are known to be less a constraint than motivation or proximity to an institution, that knowledge is based on the evidence of the past, when tuitions were low or even nonexistent. If, as seems destined, the trend continues toward the student paying a higher proportion of the costs, in the short run the means for aiding the low income student to attend do not appear likely to keep pace. To provide such aid, extraordinary effort on the part of institutions and the state will be required, including a reallocation of existing resources.

The promise of federal aid in substantial amounts to promote higher education (rather than research) has been made for some 15 to 20 years. Such money in anything like the sums desired or anticipated will probably not materialize — certainly not in time to save all the private colleges — nor in an amount sufficient to continue the "add-on" method of conducting public college business. The federal government may not be under the same revenue-generating constraints as the states, but the new social problems are also turning the federal priorities away from higher education. At the moment, federal institutional aid in large amounts seems a remote possibility. The White House opposes it, and so does the Senate.[7] To rely on federal aid, therefore, except for what could come through the low income student, is to lean on a weak reed.

Rise of Proprietary Schools Seen

Still another major trend has been largely ignored by the higher education community. This is the increasing tendency for those who want training in a great variety of skills to attend proprietary and industrial schools, rather than traditional colleges and universities. The rate of increase in enrollment in these so-called "peripheral" institutions has been dramatically marked, even though the tuition costs are very high; during the 1960s the enrollments in these institutions more than tripled, while those in the traditional institutions merely doubled. The Educational Policy Research Center at Syracuse reports that the number of people involved in peripheral education exceeds that in all colleges and universities.[8] Thus we see a trend for the older student to pay, and pay rather dearly, for exactly the type and kind of training he wants, and almost without regard to whether or not the more traditional colleges and universities offer what he may want.

It is apparent from some of this fall's enrollment figures that students are assessing some college education in relation to its high costs in tuition and lost income, and also the job market — and that many are turning away from the college and the university toward another type of institution, or dropping out to resume their education at a later time or by nontraditional means. These new means — the external degree, the university without walls, the work-study program, the new emphasis on part-time, enrollment, the video tape cassette and closed circuit TV, along with a host of other nontraditional means of offering a college education, will have profound influence on what is done within the walls of higher institutions.

Increasingly, too, we will consider the college degree less and less as certification for particular competencies; we already do. External agencies may do much more certifying than in the past, and in addition to degrees, or even without them, the post-secondary institutions may be certifying particular skills or knowledge packages. The degree itself may come to mean little as a series of lesser certificates are awarded to indicate specific capabilities to conduct certain kinds of occupational tasks. (The Center for Research and Development in Higher Education at Berkeley is about to engage in a large program of research to look at the trends and successes in nontraditional higher education.)

All of the trends I have mentioned point directly to increasing reliance on greater centralization of planning, with the major chore resting squarely on state level policy planners and on the regional organizations which may aid in making the most use of state resources. For planning purposes the states are increasingly reliant on a state coordinating board and, to a lesser degree, on a single state governing board for the public colleges and universities.

Initially established to review budgets and prevent duplication of expensive or esoteric programs, the state coordinating board soon began to be looked upon as the principal means by which some order could be applied to institutional development. The need for coordination in the 1960s was clear. Teachers colleges became state colleges and then universities, trying to compete in program offerings and degree levels with the leading state university. The university in turn became more and more research- and graduate school-oriented, bringing the attendant high costs of these kinds of pursuits. Branch campuses and community colleges proliferated, and competition among institutions for state dollars forced legislators and governors to seek some means of settling disputes about resource allocations.

The newest laws usually give the boards power to review and make recommendations on budgets — both capital and operating — to approve or disapprove every new degree program, major, department or center in all public institutions, and to provide master planning for the further development and control of higher education. They may set tuition levels, construction standards, admissions standards, enrollment ceilings, and engage in other activities. As the states see additional problems or issues arising, virtually all boards are given new powers in each legislative session. Those powers will continue to increase as the consequences of the trends previously delineated become apparent to the policy makers. Some of us who have researched and studied state coordination over the years have concluded that if the boards are to be effective over time, they must take a stand between the state government and the institutions, being a captive or front for neither.[9] This has been an extremely difficult position for most boards and their staffs to maintain. Some years ago the institutions were likely to control the boards, but in the last few years, as dollars have become scarcer, the directors and their boards have moved closer to the governor's office — with unpredictable consequences as political fortunes fluctuate between parties.

Overall, the constraints applied by coordinating boards to the institutions can be considerable, and they will be even more severe in the future as the boards deal more and more with all of postsecondary education, including the proprietary institutions, universities without walls, and the private colleges and universities. All educational resources will increasingly come under the state boards' surveillance. With level funding, level and then diminishing enrollments, and state aid to private colleges, state planning boards will determine the future size and program of most institutions. Having said this, let me also read in one very important caveat about which state agency will be doing the planning. If the state board fails to achieve all of the objectives which the state government thinks desirable, then the state budget office of the governor will do the principal coordinating. Experience also indicates that as the governor's office becomes far more powerful than the legislature, the legislature sets up its own budget review agency and review procedures. Thus, in some states today a college may have as many as three full budget reviews before the legislative committees hold their first hearings — and there may be as many as four hearings. Greater state intervention and less institutional autonomy is a trend which will accelerate, despite recommendations for decentralization in the recent Newman report and also by the Carnegie Commission.[10]

What will be needed, as it is in any time of financial constraint, is far more planning than has been done in the recent past, to utilize available resources with greater effectiveness. This responsibility will continue to fall primarily on state governments and on the institutions.

NOTES

1. *San Francisco Chronicle,* October 19, 1971, reporting Ben J. Wattenberg on data from the National Center for Health Statistics, Washington, D.C.
2. Allan Cartter, "Graduate Education in a Decade of Radical Change," *The Research Reporter,* Center for Research and Development in Higher Education, University of California, Berkeley, 1971, *VI* (1), 5-6.
3. University of California, *University Bulletin,* November 1, 1971, *20* (8).
4. Research on state relationships to universities and colleges, sponsored by the Center for Research and Development in Higher Education, University of California, Berkeley.
5. Jerome Evans, "View from a State Capitol," *Change,* September 1971, *3* (5), 40 ff.
6. Joseph Boyd, "1971-72 Undergraduate Comprehensive State Scholarship/Grant Programs," Illinois State Scholarship Commission, 1971, mimeographed.
7. *Chronicle of Higher Education,* November 15, 1971, *VI* (8), 3.
8. Stanley Moses, "Notes on the Learning Force," in *Notes on the Future of Education,* February 1970, *1* (2), 7, Syracuse University.
9. See Robert Berdahl, *State Coordination of Higher Education,* American Council on Education, 1970, and Lyman A. Glenny, et al., *Coordinating Higher Education for the '70s,* Center for Research and Development in Higher Education, Berkeley, 1971.
10. Frank Newman et al., *Report on Higher Education,* Department of Health, Education, and Welfare, U.S. Government Printing Office, 1971 and also The Carnegie Commission on Higher Education, *New Students and New Places,* McGraw-Hill Book Company, New York, 1971.

Allocating State Funds for Support of Higher Education

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It is a pleasure to participate in this Seventh Legislative Work Conference. Although Oklahoma is not a member of the Western Interstate Commission for Higher Education, higher education in our state has benefited greatly from the excellent work of this regional compact agency.

Since public education is a responsibility of the state and since the problems which exist in the development of higher education are rather common, it is good business that decision makers get together and share their problems, experiences, and ideas on how we may best proceed in the attempt to find solutions.

One of the greatest problems and perhaps the most practical one is that of providing *adequate* budgetary resources for the development of higher education. A second major consideration is the achievement of *equity* in the allocation of funds by institutional type and among institutions of like type. A third is to provide needed *flexibility* in the budgeting of resources, a fourth is to promote *efficiency* in the use of those resources, and a fifth is to assure the public of our *accountability* through proper accounting and reporting procedures. This list is not intended to be exhaustive, but rather is suggestive of the kinds of considerations which should underlie a proper conceptual framework for the allocation of resources.

Offhand, I do not know of any state which has a perfect system for allocating higher education funds, nor one which is satisfied with the system being used. I suspect that you will find as many solutions to this problem as you have states wrestling with the problems and as you have institutions and other agencies of higher education within states entitled to share in the funds available. There are, as you know, various approaches in use, ranging from simple line-item procedures to formula approaches using complicated mathematical techniques. However, I am not here to review the literature or enumerate the approaches used in the various states, but to describe the manner in which we attempt to do this job in Oklahoma.

Oklahoma has a State System of Higher Education composed of all colleges and universities and other constituent agencies of higher education supported wholly or in part with state legislative appropriations. This includes two state universities, six state colleges operating programs through the master's level, four senior colleges operating programs through the baccalaureate level, eight two-year state colleges, six community junior colleges, and seven other constituent agencies (Medical Center, Geological Survey, College of Veterinary Medicine, Agricultural Experiment Station, Agricultural Extension Division, OSU-Okmulgee Tech, and OSU-Oklahoma City Tech), making for a total of 33 fiscal units of the state system.

The state system was created by amendment to the Constitution adopted in 1941. This constitutional change also provided for a coordinating board composed of nine lay citizens appointed by the governor and confirmed by the state senate who serve nine-year overlapping terms, and when appointed and confirmed cannot be removed from office except for cause. This board has constitutional responsibilities to coordinate public higher education in the state with respect to planning and development, particularly in the areas of functions and educational programs of institutions, standards of education, granting of degrees, and allocation of budgetary resources, both for educational and general operating budgets and for capital improvements.

The state regents make studies of the budget needs of institutions and submit recommendations directly to the state legislature accordingly. The legislature appropriates in consolidated form to the state regents for the state system without reference to any particular institution, and the regents subsequently allocate to each institution ". . . according to its needs and functions." The allocation is made in lump sum to each institution, and the administrative leadership and governing board of the institution program the sum of money for expenditure using a uniform budget format design consistent with principles of the national manual, *College and University Business Administration,* published in revised form by the American Council on Education in 1968. The budget as proposed for expenditure is then reviewed by the state regents for consistency with the state system budget recommendation submitted previously to the state legislature documenting the money needs for the fiscal year of the various segments of Oklahoma higher education.

Now, I should like to briefly describe for you the manner in which the state regents go about the preparation of a recommendation to the state legislature on the funds needed by the Oklahoma State System of Higher Education for a given fiscal year. My remarks shall be limited to the educational and general operating budget needs and, consequently, will not include recommendations for funds for capital improvements. A "formula" approach is used; and the principles, criteria, and procedures are briefly described as follows:

Basic Factors of Consideration

Budget needs are determined for each institution and other constituent agency of the state system individually. The composite of these budgets makes up the total budget proposal of the state regents submitted to the state legislature. The first factor for consideration is the function and educational programs of institutions, and the second basic factor for consideration is the number of students who are expected to participate in the educational programs. A third factor for consideration is the number of academic personnel needed to teach, advise, counsel, and supervise students while on the campus. Regular institutions are categorized into four groups: universities, master's degree level institutions, bachelor's degree level institutions, and associate degree level institutions. Six community junior colleges comprise a special category. Also included are specialized constituent agencies of the system — the Medical Center, Geological Survey, College of Veterinary Medicine, Agricultural Experiment Station, Agricultural Extension Division, OSU-Okmulgee Technical Institute, and OSU-Oklahoma City Technical Institute — each performing a unique function as suggested in its title and requiring a separate formula approach in arriving at their budget needs.

Student Enrollment (Full-Time Equivalent)

The full-time equivalent student enrollment for each institution is projected for the fiscal year for which the operating budget needs are being defined. The number of semester credit hours in which all undergraduate students are expected to enroll is divided by 30 to derive the FTE undergraduate enrollment projected for the fiscal year (summer term, fall semester, spring semester); the total semester hours in which graduate students are expected to enroll is divided by 24 to get the FTE count for the fiscal year. The sum of the two figures constitutes the FTE enrollment projected for the institution for the year for which the budget needs are being defined.

Number of Faculty Needed

The number of full-time equivalent faculty positions needed for lower-division instruction at all institutions is computed by dividing the FTE enrollment projected by a factor of 28; the number for the upper-division instruction is determined by dividing the FTE enrollment by a factor of 20; and the number needed for graduate level instruction at the universities (through doctoral level programs) is computed by dividing the FTE by a factor of 8 and for graduate education at the state colleges (through the master's degree level) by dividing by a factor of 12. The sum of the three levels of FTE faculty positions constitutes the total number of faculty positions required for the institution.

Faculty Salaries

On the assumption that Oklahoma desires quality in college teaching, at least on a par with neighboring states, and quality that would approach at least the average in all American higher education, it follows that to obtain the services of teachers whose competency measures up to this standard of expected performance, our colleges and universities must compensate for teaching services with salaries which will equal those paid in the region and will approach the average paid in the nation in like-type institutions. Through continuing studies at the regional and national levels, information is obtained for establishing these standards.

Budget Division According to Eight Functions

The budget is organized into eight basic functions: (1) resident instruction, (2) organized activities related to instruction, (3) general administration, (4) general expense, (5) organized research, (6) extension and public service, (7) library, and (8) operation and maintenance of physical plant. The amount determined as needed for resident instruction is computed by multiplying the total number of full-time equivalent faculty teaching positions by the average annual salary (9-10 months) which has been established as the standard for the ensuing year, and to the sum is added 33 percent for other instructional expense. The total represents the amount required for resident instruction and this becomes the budget base. Certain percentage factors are then applied to the budget base to determine the amount required for the other seven functions of the budget. (These factors are determined on the basis of experience of institutions in the expenditure of budget funds as classified by the eight functions.) The sum of the amounts determined for the eight basic budget functions then becomes the total educational and general budget statement for the institution.

Income for the Budget

An estimate is made of the amount of educational and general budget income expected to be collected at each institution and agency from student fees, sales and services of educational departments, and from other miscellaneous sources (commonly called the revolving fund). The total amount estimated is subtracted from the amount of the total institutional budget requirement. The difference becomes the amount required in state-appropriated funds to fund fully the budget as proposed. The total of the amount of budget funds required at each institution and other constituent budget agencies of the state system equals the educational and general budget needs as proposed by the state regents for consideration by the state legislature.

Institutional Budget Hearings

An important element in the state regents' procedure to identify budget needs of the various institutions is the series of meetings with institutional administrators to obtain their views and recommendations regarding the budget needs of their respective institutions. These budget hearings are held on a scheduled basis by the state regents in late summer and early fall of the year preceding the convening of the legislature in January.

Communication of Needs

The state regents as the coordinating board of the Oklahoma State System of Higher Education has the responsibility of communicating the budget needs to the Oklahoma State Legislature and is responsible to follow up and furnish additional information as may be required by legislative committees in the process of consideration of the budget as proposed. Institutional administrators may be involved by providing further supporting information and back-up for the chancellor and state regents at legislative budget hearings. After the legislative considerations are completed and a decision has been made as to the amount of funds to be available to the Oklahoma State System of Higher Education, the legislature must make its appropriation pursuant to the state constitution, to the state regents in lump sum for the state system. Subsequently, the state regents allocate the funds to each institution "according to its needs and functions." Its needs and functions will have been reflected in the budget proposal previously submitted to the legislature.

In the event the legislature is unable to appropriate all of the funds requested, which is usually the case, the state regents then allocate in proportionate manner to all institutions and other budget agencies of the state system, the funds which were made available. Also, as previously mentioned, the state regents allocate to each institution a lump sum of funds from the consolidated appropriation made by the legislature and an allocation is made against the estimated amount of revolving fund revenue to be collected at the campus level. The sum of these two funds then constitutes the amount of budget funds available to the institution for the year. The institution then structures the proposed expenditure of the lump sum allocation using a budget format provided by the state regents and submits the proposed program of budget expenditures to the state regents for approval. Subsequently, a copy of the approved budget is filed with the state budget director who acts as the master bookkeeper at the state level for the institution's administration of the budget.

At the end of the fiscal year, each institution makes a financial report to the state regents on expenditure of the budget. Also, monthly reports are made by the state budget director reporting expenditures both to the state regents and the institution. This serves as follow-up check as to the expenditure of budget funds in accordance with the various functions of the budget for which funds were allocated.

Research and study regarding budget needs of institutions is a continuous matter. This includes information from institutions in the state as well as comparable information from institutions of like type in the region. Also, national data are used, to the extent to which valid information is available. Standards with respect to average faculty salaries, student-faculty ratios, student fees and tuition, state-appropriated funds, methods for computing full-time equivalent enrollments, comparisons of per FTE student amounts, and the like are determined from results of annual studies made of institutions in a 10-state region. This information is gathered directly from each institution with about 165 participating. The region includes, in addition to Oklahoma, the states of Kansas, Nebraska, Iowa, Missouri, Arkansas, Texas, Colorado, New Mexico, and Arizona. We have maintained wholesome rapport with these institutions over a period of about nine years. Results of regional studies relating to budgetary matters are shared with all participating institutions.

Dr. Donald F. Kline,
Executive Director of Higher Education,
State Board of Higher Education, Idaho

Determining Institutional Objectives

In any discussion of the establishment of institutional objectives, how those objectives are to be accomplished, and by whom they are assigned, several factors must be taken into consideration.

First, let's take a look at the historical basis for the existing role and mission of higher education. Second, let us consider how the several constituencies currently involved in decision making came into being. And then I want to talk about a few guidelines and venture a glimpse into the future.

As you already know, higher education in this country claims three broad functions. These are teaching, research, and service. However, these broad purposes of higher education did not spring full blown into existence with the opening of Harvard in 1636. The historical fact is that all education in this country existed for many years for the sole purpose of transmitting knowledge or what we have come to simply refer to as "teaching." The records available on the founding of Harvard College, the information related to the founding of the free schools of Dedham and Roxburie, the Massachusetts laws of 1634 and 1638 clearly show that the major purpose of education was primarily to transmit knowledge.

A most vivid example of that viewpoint is found in the famous act often spoken of as "the old deluder, Satan, Act," enacted on November 11, 1647, wherein the only reason stated was to keep the knowledge of the scriptures from being buried in the graves of our ancestors. It seems logical to conclude, therefore, that the chief purpose of education at any level was that of teaching.

Winged Seeds of Darwinism

It was the middle of the nineteenth century before institutions of higher education began to engage systematically in seeking new knowledge. It was not until the winged seeds of Darwinism began to blow across the fertile soil of higher education that scholars in theology and biology began to question the Biblical account of the origins of man and the geologists began to question that of the origin of the earth itself.

By the time the Civil War was underway the second function of the university was beginning to be established; namely, to engage in seeking new knowledge, i.e., research.

The research role of higher education was given sanction by the federal Congress with the passage of the Morrill Act of 1862. Moreover, the Congress established the third basic mission of higher education by expressing the desire that the intellectually-based expertise in higher education be used to solve problems being brought about by a rapidly expanding agricultural and industrial society. Thus, the idea that a college or university should engage in service or the application of knowledge to the solution of societal problems was established.

Having looked most briefly at the origins of the broad general mission of higher education in America, let us now look at who was involved in establishing these functions.

From the very beginning of American higher education until the Civil War two identifiable groups were clearly the major decision makers. Roughly, these groups might be identified as (1) the legislative bodies and (2) the governing boards (translators of the desires of the general public) and faculties. (It must be understood that the faculty also included what we now consider the administration since the president was and, in many cases, still is the chairman of the faculty in colleges and universities.)

Two New Voices

Students as an identifiable group were not involved except as they were a part of the general public. Certainly, the group we now identify as the coordinating or governing statewide council or board was not involved. The involvement of these two groups did not come until sometime later. And, their appearance on the scene resulted from several phenomena occurring since the beginning of the twentieth century.

By the early 1900s the immediate governance of the college and university by the faculty was becoming well established and being well nourished in the fertile soil of academic freedom.

While the immediate governance of higher education was left to the faculty, the general governance still remained in the hands of the regents or trustees — and, of course, the legislature. This pattern continued in the earliest part of the 1900s, but several phenomena occurring somewhat simultaneously prompted significant changes during the first half of this century.

Within the first 30 years of the century, enrollments in higher education quadrupled as the American people recognized the social, economic, and cultural advantages of a college education. During the second three decades enrollments tripled; and in the last decade alone (1960-1970) enrollments in American colleges and universities doubled.

Original Function Enlarged Upon

Simultaneously, as a result of applying new knowledge to the solution of technical problems, the industrial base of the nation was expanding. The ability to communicate with one another more effectively over longer and longer distances brought the nation closer together in a physical sense resulting in greater federal concern for all of society. The demands placed on the land grant college or university as a result of the expanding agricultural enterprise also caused competition for institutional resources. World Wars I and II and our concern for national security and scientific supremacy immediately following World War II brought about even greater competition for institutional resources. Both pure research (seeking of new knowledge) and applied research (the application of new knowledge to the solution of societal problems) forced the original function of higher education more and more into the background. And this competition came at the same time that significant numbers of students were seeking the benefits which a college education can afford.

This combination of circumstances prompted the states to increase expenditures for higher education one hundred fold between 1910 and 1964. Public expenditures for higher education went from $21 million to $2.1 billion during this 50-year period. As we used the limited manpower to press forward into the space age, we found ourselves trying to accommodate a tidal wave of students. Moreover, students remained longer and longer in the institutions seeking advanced degrees. Students became more mature both chronologically and intellectually and to some extent were, and are, seeking situations more like those in French and German institutions, where a student can "drop in" and "read" with a specific professor or even study independently.

In the view of many, and in my view, a combination of this competition for resources within the institution and of the attitudes of students reflecting more mature desires accounts in large measure for students' demands that they be given a greater voice in the management of the institutions. And as regrettable as it is that these demands took the form of demonstration and riot during their early days, I believe we are safe in predicting that the very rapid maturity of students today foretells a time when their demands will be listened to within the mechanisms of representative government. There is some reason to believe that we have already reached that time.

Recognizing this competition for resources and in an attempt to help solve identified national goals, the federal government began to inject itself more and more into the higher education environment. On the one hand the federal government increased the burden of the institutions by providing financial assistance to the G.I., to the educationally and economically disadvantaged, and to students in education, health, and the physical sciences. They increased the burdens and, to some extent, involved themselves in curricular matters by providing categorical aid for mathematics, science, modern foreign languages, guidance and counseling, health and allied health fields, and certain of the social sciences. These categorical aids to higher education prompted most institutions to compete for funds and develop capabilities which they might not otherwise have contemplated. Thus, competition and undesirable duplication developed to the great discomfort of legislators involved in the allocation of the state's available revenue to all functions of state government. Worse, legislators were caught up in the political abrasions that resulted from trying to allocate the education dollars available between and among highly competitive institutions with politically strong constituencies.

Because of this competition and because the federal legislation directed the establishment of state agencies to allocate federal dollars in some programs, the state coordinating councils and state governing boards have come into the picture.

By the time we entered the 1970s the groups involved in determining the role and objectives of institutions of higher education had been identified. The more immediate, if not the most important, question is, "What is the most appropriate role of the faculty and the administration, the students, the trustees and/or regents, the statewide coordinating council or governing board, and the legislature?"

Appropriate Role Noted

At least some suggestions have already been provided in *The Carnegie Commission Report* of April 1971 to which I have already alluded. For purposes of this discussion I have abstracted them and submit them as appropriate roles for coordinating and/or government agencies regardless of the form they may take in the several states.

The state coordinating and/or governing agency should work toward:

- Avoiding wasteful duplication in programs and harmful competition for resources
- Effective allocation and use of new resources
- Increasing and providing measures of educational quality
- Insuring adequate access to postsecondary education for all citizens
- Providing greater articulation between and among the various elements within postsecondary education — both traditional academic programs and programs identified as vocational-technical
- Fostering understanding of common goals among the several elements of postsecondary education
- Protecting the institutions, when necessary, from undue legislative, executive, or public interference in clearly educational enterprise or function.

Input from Legislative and Executive Branches

The legislative and executive branches of government also play important roles in determining the goals and objectives of higher education. More and more states are beginning to think in terms of a state system of higher education rather than in terms of individual institutions. In my opinion this is not only good, it is an absolute requirement if we are to accommodate steady increases in enrollments, apply the resources of the institutions to the solution of new societal problems, and continue to seek new knowledge. The most appropriate role of the legislative and executive branches of government, therefore, appears to be to:

- Review the funding levels of their coordinating and/or governing agencies to insure adequate and highly qualified staff capable of carrying out not only their legal requirements but also capable of dealing effectively with the sensitive and complex tasks of personal relations
- Determine the extent to which the state can afford quality education for its citizens and appropriate, with minimum restrictions, such funds as can be made available. (The Carnegie Commission recommends that a state appropriating less than 0.6 percent of per capita personal income take immediate steps to increase their financial support for higher education.)
- Appropriate sufficient funds to insure universal access to postsecondary education related to the needs and qualifications of each citizen
- Insist on equality of educational opportunity
- Encourage diversity and foster a broad range of academic, technical, professional, and vocational options
- Provide, through its central coordinating and/or governing agency, incentives for desirable innovation
- Examine the balance between tuition and fees for instruction and the amount of support to come from public sources
- Insist that the state continue to exercise major responsibility — as opposed to federal responsibility — for maintaining, improving, and expanding systems of postsecondary education. (It is assumed that local government, i.e., community colleges and private institutions located within a state are a part of the state's system.)

Perhaps the most significant deterent to changes in existing systems or even within individual institutions is the reluctance of the faculty to adapt rapidly to changing needs. The need for easy entry and re-entry into higher education, the need to extend the boundaries of the campus to a broader geographic area, the need to recognize the difference between "scholarship" and "education and/or training" (especially as education and training can be carried out in an off-campus or "extension" setting), and the urgent need to strike a balance between teaching, research, and service constitute ways in which the faculty can play its most appropriate role.

Both Academic Freedom and Responsibility Required

Additionally, universities and colleges must be assured the essential elements of academic freedom, and they must accept the responsibility that accompanies these freedoms. All groups involved in deciding on which role, mission, or objective seems appropriate for an individual institution within a state's system must recognize that the autonomy and integrity of any educational institution is deeply rooted in the following:

- Freedom of speech, assembly, and other basic freedoms essential to the educational process
- Determination of courses of instruction and content of courses
- Selection of and complete autonomy in the conduct of individual research and freedom to publish and otherwise disseminate findings, i.e., freedom of inquiry
- Selection, when a state's constitutional proscription does not prohibit selection, or at least selective retention of students
- Awarding of individual degrees or other recognition of work accomplished

Furthering Student Participation

Student participation in determining the role and objectives of an institution, as I see it, can be carried forward by:

- Recognizing that changes can best be made while working within established patterns of governance
- By continuing to work and serve *with* the faculty committees and councils to secure change
- Stressing felt needs for access to programs that not only meet the state, regional, and national manpower needs but also meet the individual emotional and intellectual needs of more mature individuals which students are increasingly becoming
- Insisting that mechanisms be found to insure (without resorting to violence) that the voice of the student shall be heard
- Understanding that decisions may not be identical to positions advocated by any single segment of the enterprise

These guidelines abstracted, in part, from the Carnegie Report are not intended to be all inclusive. They are intended solely to provoke discussion.

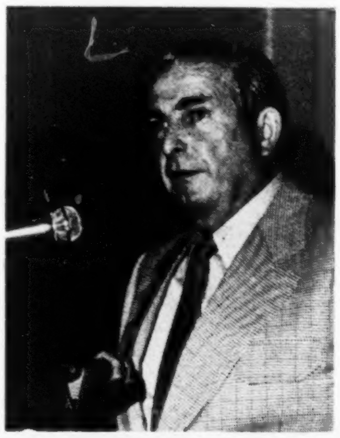
Finally, permit me to glance quickly into the future. Any review of the past shows that higher education in this country has accommodated the tidal wave of students without significant loss of quality, even though there were many who said it could not be done. The search for new knowledge has permitted this nation to gain world leadership in almost every sphere of human endeavor. The application of that knowledge has brought about a relatively high standard of living for most — although not all — of us.

To assume that we can now retrench, cut back, limit, or defer our continued support of higher education is to assume that we are willing to sink to low levels of accomplishment and thence to a second-class status among the nations of the world.

And it is most important that we do not subscribe to the idea that our greatest task is the production of technologists who can "fit" a job slot. We must continue to *educate* our citizens so they recognize the significance of what they do. Each citizen must be truly educated in addition to being well trained, whether he is a scientist, diplomat, prize fighter, or plumber. To do less is to foretell the ultimate collapse of representative government. To do less is to subscribe to that school of determinism that holds that every human action is foreordained by actions which have already taken place. Hopefully, for those of us who still cling to the belief that man's will is essentially free, higher education will continue to receive high levels of support so that we may move forward rather than regress.

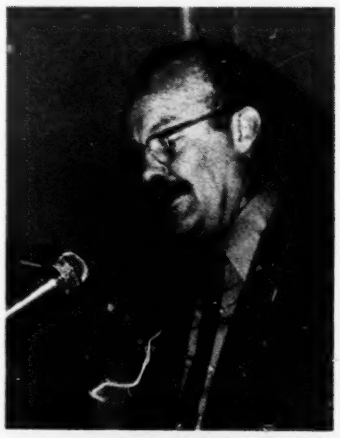
Conference Wind-up

In the final session of WICHE's 7th biennial Legislative Work Conference, six speakers reported to the entire group on the contents of papers presented during the conference segment on "Issues in Higher Education." Those six speakers are pictured below.



The Honorable
Stafford Hansell
State Representative
Oregon

The Honorable
Harold Giss
State Senator
Arizona



Dr. William McConnell
Director
New Mexico Board of
Educational Finance

The Honorable
Jerry Apodaca
State Senator
New Mexico

The Honorable
Genie Chance
State Representative
Alaska

The Honorable
Patricia Saiki
State Representative
Hawaii

Participants

WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION

LEGISLATIVE WORK CONFERENCE ON HIGHER EDUCATION IN THE WEST

December 12-14, 1971 — Phoenix, Arizona

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